map within the legend boxes mentioned above, to eliminate the need for adding it to individual copies of maps.

This system gives an indication which builds up visually with much the same effect as that of the maps in Part I. Since distinctions of quality depend on cumulative weight of hatching rather than on color, any map prepared in this fashion can be photostatted or reproduced on a blueprint machine with little expense or labor.

PRESENTATION TABLES, CHARTS AND MAPS

The selection of summary tables, finished charts and maps to be included in a formal report or other finished presentation will depend on local factors and on decisions of the director as he interprets the work tables and charts described above. Fundamental considerations in organizing these presentation materials are discussed in Chapter VI, Section 1.

Do not overlook the fact that the early pages of a report should contain a good summary table or chart of descriptive characteristics of the survey area, covering the number of units, types of structures, sizes of families, incomes (if enumerated) and similar factors. This will help the reader to understand what kind of area (aside from quality characteristics) is being treated in the report. The need for such information is stressed because it was deliberately omitted from Part I of the present publication—which it is thought may serve to some extent as a pattern for organizing presentation materials.

G. *Special Calculations*

Operations described below will be demonstrated as necessary by the consultant. The following instructions are given primarily for reference after the consulting period.

TABULATING LARGE AND SMALL GROUPS OF MARGINAL PUNCH CARDS

Card-group too large for the Percentor (batch-sorting). If a group of cards to be tabulated exceeds the capacity of the Percentor, a table can be constructed by an intermediate step called batch-sorting, which requires a work sheet preliminary to the table. The procedure is as follows:

1) Prepare a copy of the Tabular Form as a work sheet. Identify it by the number of the table to be made, with the symbol (W) before the number. Show the district number, a short form of the table title, the date and your initials. In the stub show the stub item and line items of the table. Leave the column-group headings blank until Step 2.
2) Before sorting cards, divide them into uniform groups or batches of such size that each is within the capacity of the machine. Label as many column-groups as there are batches: Batch 1, Batch 2, etc.
3) Sort each batch of cards for the item in question (punch-checking the sorts if necessary).
4) Scale the sorted batches, making the regular column *c* and column *d* entries for each batch.
5) For each punching class, total the column *d* values across the sheet, and divide each total by the number of batches used. Enter these results in a column-group reserved for this purpose, labelled Average.
6) Transcribe the average column *d* values produced by step 5 into column *d* of the final table.
7) On the new table, add the column *d* entries to produce cumulative percentages in column *c*.
8) If range-graphs are desired, produce these by inspection of column *c*.
9) File the work sheet in the regular ringbook, behind a divider labelled Work Sheets.

Card-group too small to scale (count and percentage calculation). If fewer than 40 or 50 cards are to be tabulated, it may be easier to count these than to scale them. This might be the case with a very small appraisal area, or more commonly with one of the breakdowns in a secondary tabulation, where for example the number of cards in the highest or lowest rent class may be very small. The procedure is as follows:

1) After sorting (and punch-checking, if necessary), count the cards in each class and record these counts in column *c* of the Tabular Form.
2) Total the counts and enter the sum in column *c*.
3) Compute the percentage in each class (to one decimal place) and enter these figures in column *d*. Add these percentages and enter the total (it should be 100.0) in column *d*.
4) Erase the entries in column *c* and replace them with cumulative percentages, obtained by adding the figures in column *d*.
5) If a range-graph is wanted, construct this by inspection of column *c*.

TOTALLING TABLES TO A HIGHER RANK (MARGINAL PUNCH CARDS)

Where tables are to be raised from one rank to another, as in producing a district table of rank B from the appraisal area table of rank C, this can be done without resorting the cards for the higher rank of tabulation. Several methods are available, as follows:

Reassembly and rescaling of cards. This method can be used when the total number of cards in the groups to be combined does not exceed the capacity of the Percentor, as where several small appraisal areas are to be combined to produce the district table. In such a case, the subgroups are combined, class by class. The total group is then scaled and tabulated in the regular fashion. This must of course be done before the sort for the stub item of the table is disturbed—that is, before the cards are sorted for any other table or stub item.

Reassembly and batch-scaling. If the subgroups when

AN APPRAISAL METHOD FOR MEASURING THE QUALITY OF HOUSING: A Yardstick for Health Officers, Housing Officials and Planners

Part II. Appraisal of Dwelling Conditions

Volume C. Office Procedures

57-1053
11-10

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COMMITTEE ON THE HYGIENE OF HOUSING

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Appendix C

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Appendix C-1

FILES AND ADMINISTRATIVE CONTROLS

The filing system and controls discussed below will promote efficient practice in handling schedules and other materials through the various stages of office work. They will also supply a simple but comprehensive record of work completed and of the time required to accomplish this work. This machinery will be adapted to local needs with advice of the consultant of the Committee on the Hygiene of Housing, and preparations need not ordinarily be made in advance of the consulting period except to procure materials as listed in Appendix A-2.

A. Schedule Files

Dwelling schedules are the principal materials used during the phase of data collection, and they are also handled repeatedly in the processing phase.[1] The accuracy with which the schedules are filed will therefore play a determining role in the efficiency of all office work. The basic elements of good practice in schedule filing are set forth below.

FILE GUIDES

File guides (heavy pressboard dividers) are used to show the work status of schedules, i.e., the stage to which checking, scoring or other operations have progressed for any group of schedules. This status is reflected in the file simply by placing the schedules (in their file folder) behind the file guide which indicates the last operation performed on that group of schedules. For instance, a folder containing schedules which have been returned by an inspector and checked for completeness of entries is filed behind the guide labelled Completeness Checked. A separate permanent record of the status of all schedules is kept on the Progress Control Table, discussed below.

Lists of the file guides ordinarily needed are given in Figures C1 and C2.

FILE FOLDERS

Unit Schedules for any dwelling are kept within their Structure Schedule, which thus provides a handy container for related Unit Schedules. Structure Schedules, containing their Unit Schedules, are grouped in standard manila file folders.

In the general schedule files, one file folder is used for each block of the study. These block folders are identified by typed labels on the tabs, showing the district and block numbers, thus: *2/17* would indicate District 2, Block 17. Labels of block folders show only the identification of a block, *not* the stage to which work has progressed on schedules for the block. This latter purpose is served by file guides, as explained above, and by Progress Control Tables, discussed below.

The special schedule file, as indicated by Figure C1, provides for certain groups of schedules removed from the general file for special treatment. Each folder in the special file may represent a district or other major grouping of blocks; or it may carry the name of the worker who is to do the special operation needed.

In preparing all schedule file folders, it will save time if they are creased open at the hinge so as to form a base wide enough to receive a considerable number of schedules. Thus the schedules will not ride up behind the front part of the folder and obscure the labelled tab.

FILE DUMMY SHEETS

A File Dummy Sheet is placed in a block folder to indicate the temporary absence of a schedule or group of schedules from the folder, as when reissued to the inspector for correction, or when removed for field checking. Dummy sheets may be mimeographed on yellow copy paper in accordance with the form provided in Figure C3. Cutting two inches off the end of dummy sheets will provide a form 8½ x 9 inches. When stood on end this will show a one-half inch margin of yellow paper above the schedules in the file folder, serving as a conspicuous marker of absent material.

Dummy sheets are provided to the field workers, to give them a means of notifying the office when schedules are being withheld for completion after the remainder of a block or other assignment has been completed and schedules for it returned to the office.

During the period of field work, before serial numbers are assigned to schedules, a schedule withheld or removed from the file is identified on the dummy sheet by

[1] Schedules become inactive during the phase of analysis and interpretation, which is conducted wholly from the punch cards.

its district and block numbers and street address. At this stage it is normal practice to withhold or remove together all the schedules for a structure: Structure Schedule and Unit Schedules. Thus a dummy sheet returned from the field indicates the absence of schedules for a structure and all the units within it.

In later operations, when serial numbers have been assigned, a schedule absent from the file can be identified merely by the district and block numbers with the appropriate structure or unit serial number, without the street address.

In all cases the dummy sheet shows (in addition to the address or serial number and the district and block numbers) the initials or name of the person to whom the missing material is charged, and the date of its removal or withholding from the file.[2]

Before replacing a schedule in the file and removing its dummy sheet, the schedule must of course be carried through any operations needed to bring it up to the stage of work shown by the file guide in front of the block folder.

Since dummy sheets can be used repeatedly by crossing out the written entries each time a schedule is returned to the file and its dummy removed, two or three hundred sheets should usually suffice for both field and office staffs.

B. Other Files

SAMPLING DATA

In a study where sampling rather than complete enumeration of dwellings is used, separate file folders may be needed for the maps or property lists used in selecting sample dwellings. Such material can usually be filed by districts or by groups of blocks rather than block by block. A separate file drawer should ordinarily be used for such materials, and folders of sampling data should carry colored labels to distinguish them from block folders of schedules. In this way, folders of sampling data can also be identified merely by district and block numbers, thus: *1/1-20* for District 1, Blocks 1-20.

APPRAISAL FORMS

At the end of the processing phase, the Unit Appraisal Forms, used to score dwellings, are to be filed. These may be kept separately, in order of unit serial number, or they may be stapled to their Unit Schedules and returned to the block folder. Separate filing of appraisal forms is generally preferable. They can be kept in standard correspondence file drawers or in the special punch card cases cited in the second paragraph below.

[2] A further safeguard on filing practice is provided by the Dwelling Serial List, explained in Appendix C-2 and illustrated in Figure C8. At any stage after completion of data collection and assignment of serial numbers to the schedules, reference to the Dwelling Serial List will show exactly which schedules (or dummy sheets therefor) should be in any block folder.

PUNCH CARDS

If machine tabulation is employed, the regular filing installation for punch cards will be used, and no special equipment will be required.

If marginal punch cards are used, they may be filed in a regular correspondence file drawer or in the punch card cases described in Appendix A-2 (item 26). In addition to the temporary file guides specified in Figure C2, permanent guides will be needed to classify marginal punch cards by districts or other groupings during the phase of analysis and interpretation. The scheme will depend on local circumstances, and can be worked out during the consulting period.

TABLES AND CHARTS

Tables and charts produced during analysis are filed in ringbooks as specified in Appendix A-2 (item 6). Small-scale preliminary maps of findings can be filed in the same or similar ringbooks. The scheme of classification by districts or other groupings will depend on local considerations, and can be formulated during the consulting period.

ADMINISTRATIVE RECORDS

A file should be maintained for correspondence, financial and personnel data, completed Progress Control Tables and Office Time Distribution Records, and other general data. Needs under this heading will depend chiefly on the size of the project, and requirements will be set by the director.

C. Progress Control Tables

STANDARD PRACTICE; PURPOSE

Progress Control Tables for the data collection and processing phases are shown in Figures C4 and C5, respectively. At the left of the control table is listed each major operation of the phase, and columns across the sheet are used for blocks. As each operation is completed for the schedules in a block folder, that operation is recorded by a checkmark in the column for that block.[3] The block folder is then refiled behind the file guide corresponding to the operation just completed.

A Progress Control Table for the phase of analysis and interpretation is optional, since the tables and charts produced are themselves a record of the work completed. It is desirable, however, to list the tables planned and to check off each table against the list as it is completed. Such a list might be arranged as the table of contents for the ringbook used to file tables and charts.

The Progress Control Tables serve several purposes, and provide one of the most important tools of good

[3] Instead of a checkmark, the initials of the clerk or the date of the operation (or both) might be recorded on the Progress Control Table.

management. First, the pattern of checkmarks in the columns gives a graphic picture of the current status of all work. Second, the control tables give a permanent record of the status of work on schedules, and permit quick correction of errors if a block folder is misfiled. Finally, the tables provide the director with a convenient means of checking progress against cost and time estimates at any stage, with a minimum of special tabulations or other work for this purpose.

The layout of Progress Control Tables given here will be modified as necessary during the consulting period.

SPECIAL CASE: TABULATION AND PUNCH-CHECKING OUT OF SEQUENCE

If, during the analytic phase, tabulation is done out of the normal sequence, a Progress Control Table may be desirable to record the status of punch-checking (discussed in Appendices C-3-D and C-4). In this case copies of the standard Tabular Form can be laid out as shown in the two sheets in Figure C6, separate sheets of the Tabular Form being used for descriptive data and for scores and deficiency items.

The columns of a Progress Control Table for punch-checking will ordinarily carry district or appraisal area numbers rather than block numbers, since at this stage operations are conducted by groups of blocks combined into the largest reasonable groupings (as explained in Chapter V, Section 4).

D. Office Time Distribution Record

The use of this form, shown in the two sheets of Figure C7, is optional with the local director. It is strongly recommended, however, as it provides a simple means of keeping complete records of the distribution of office effort—both of the office staff and, if desired, of the director himself. Time is usually charged against the various operations to the nearest half-hour or quarter-hour.

Such data may prove invaluable in the middle or later stages of a study, since they will give a record of performance from which estimates can be made for desired enlargement or reduction of the study or for various other purposes related to budgetary control.

The standard Tabular Form provides a convenient base for laying out the time distribution record, one copy of the form being used for each office worker for each half month. Details may vary considerably with local conditions, and an appropriate version can be designed during the consulting period or later by the director.

FIGURE C1. FILE GUIDES: COLLECTION OF DATA

General Schedule File
- Sample Selected[a]
- Schedules Prepared[a]
- Assignment Made
- Assignment Issued
- Schedules Returned
- Conformity Checked
- Completeness Checked
- Consistency Checked
- Field Check Assigned
- Field Check Cleared
- Serialized: Ready To Process

Special Schedule File
- Pending Special Enumeration
- Pending Field Check
- Pending Comparison of Field Check
- Pending Clearance of Field Check
- Dead File: Schedules Replaced From Reserve Sample[a]
- Dead File: Duplicates From Field Check

a Needed only in sampling study.

FIGURE C2. FILE GUIDES: PROCESSING

Schedule File
- Daylight Obstruction Calculated[a]
- Room Facilities Calculated
- Income Calculated[a]
- Average Room Rent Calculated[b]
- Structures Scored
- Completed Schedules: District 1
- Completed Schedules: District 2
- Completed Schedules: District 3 (etc.)

Marginal Punch Card Files[c]
- Units Scored
- Units Coded
- Cards Punched
- Cards Partially Punch-checked: Ready for Analysis

a Optional item.
b Needed only if rooming units are enumerated.
c These are temporary guides which can be made of cardboard or bookbinder's board, 5¾ x 11 inches, with labelling close to the top (along the 11 inch edge).

FILE DUMMY SHEET 1946 BLANKVILLE HOUSING SURVEY

District and Block	Serial No. S	Serial No. U	Address	Charged to	Date

Note: 8½ x 11 inch sheets carrying this form should be trimmed to 9 inches.

FIGURE C3. FILE DUMMY SHEET

PROGRESS CONTROL TABLES

Progress Control Table: 1) COLLECTION OF DATA

SHEET 1 of 1: Blocks 1-18, District 1 TABLE PCT:1

STUDY 1946 BLANKVILLE HOUSING SURVEY

Readings XXX Entries XXX Date XXXX

	District 1																	
Block	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Sample selected*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Schedules prepared*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Assignment made: to((	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
" issued	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Schedules returned from field	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Conformity checked	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Substitutes issued*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Completeness checked	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Consistency checked	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Field check assigned	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
" " compared	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
" " cleared	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
File dummies cleared	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Serialized: ready to process	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Number of structures**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
" of units**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*This item needed for sampling study only.
**These totals obtained from Dwelling Serial List.

Tabular Form DS-6: 1944, Committee on Hygiene of Housing, APHA

FIGURE C4. PROGRESS CONTROL TABLE: 1) COLLECTION OF DATA

Progress Control Table: 2) PROCESSING

SHEET 1 of 1: Blocks 1-18, District 1 TABLE PCT:2

STUDY 1946 BLANKVILLE HOUSING SURVEY

Readings XXX Entries XXX Date XXXX

	District 1																	
Block	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Daylight obstruction calculated	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Room facilities calculated	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Income calculated*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Average room rent calculated**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Structures scored	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Units scored	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Schedules filed	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Units coded	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cards punched	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cards partially punch-checked	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Appraisal forms filed	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Code sheets filed	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Punch cards filed for analysis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*Optional item.
**Item needed for running units only.

Tabular Form DS-6: 1944, Committee on Hygiene of Housing, APHA

FIGURE C5. PROGRESS CONTROL TABLE: 2) PROCESSING

Progress Control Table: 3) ANALYSIS (PUNCH-CHECKING)

SHEET 1 of 2: All Districts TABLE PCT:3

STUDY 1946 BLANKVILLE HOUSING SURVEY

Readings XXX Entries XXX Date XXXX

Appraisal Area	1			2			3			4			5			6		
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Number units in structure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number rooms in unit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tenure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Furn., Heat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number occupants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonwhite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appraisal Area	7			8			9			10			11			12		
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Number units in structure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number rooms in unit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tenure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Furn., Heat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number occupants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonwhite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appraisal Area	13			14			15			16			17			18		
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Number units in structure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number rooms in unit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tenure	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Furn., Heat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number occupants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonwhite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Sheet 1

Progress Control Table: 3) ANALYSIS (PUNCH-CHECKING)

SHEET 2 of 2: All Districts TABLE PCT:3

STUDY 1946 BLANKVILLE HOUSING SURVEY

Readings XXX Entries XXX Date XXXX

Appraisal Area	1			2			3			4			5			6		
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Score: Dwelling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Environment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Housing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Basic Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Score: Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Occupancy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Z	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deficiency items 1-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " 21-25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " 26-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appraisal Area	7			8			9			10			11			12		
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Score: Dwelling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Environment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Housing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Basic Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Score: Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Occupancy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Z	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deficiency items 1-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " 21-25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " 26-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appraisal Area	13			14			15			16			17			18		
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
Score: Dwelling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Environment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Housing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Basic Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Score: Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Occupancy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Z	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deficiency items 1-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " 21-25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " 26-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Tabular Form DS-6: 1944, Committee on Hygiene of Housing, APHA

FIGURE C6. OPTIONAL PROGRESS CONTROL TABLE: 3) ANALYSIS *Sheet 2*

PROGRESS CONTROL TABLES

OFFICE TIME DISTRIBUTION RECORD: (Name of worker) _____ SHEET 1 of 2: April _____ OTD

STUDY 1946 BLANKVILLE HOUSING SURVEY

Readings _____ Entries _____ Date _____

Month	April															TOTAL TIME		
Day of Month	1	2	3	4	5	6	8	9	10	11	12	13						
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
ADMINISTRATION AND MISCELLANEOUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1. General Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Training Sessions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Special Projects for Director	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Absence (leave, illness, etc.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COLLECTION OF DATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7. Sampling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8. Preparation of Assignments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9. Issuance and Reception of Schedules	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10. Office Check and Substitute Assignments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11. Field Check and Follow-up	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12. Dwelling Serial List	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL TIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Sheet 1

OFFICE TIME DISTRIBUTION RECORD: (Name of worker) _____ SHEET 2 of 2: April _____ OTD

STUDY 1946 BLANKVILLE HOUSING SURVEY

Readings _____ Entries _____ Date _____

Month	April															TOTAL TIME		
Day of Month	1	2	3	4	5	6	8	9	10	11	12	13						
OPERATION	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
PROCESSING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Calculations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15. Scoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16. Coding	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17. Card Punching	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18. Filing Schedules, AF, PC, PC3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANALYSIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20. Test of Quality Difference	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21. Descriptive Tables or Charts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22. Quality Tables or Charts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23. Deficiency Tables or Charts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24. Maps	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL TIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Tabular Form DS-6: 1944, Committee on Hygiene of Housing, APHA

FIGURE C7. OFFICE TIME DISTRIBUTION RECORD *Sheet 2*

Appendix C-2

COLLECTION OF DATA

A. General Instructions[4]

This appendix covers the office operations by which dwelling schedules are 1) issued to and received from the field staff, 2) checked for accuracy, and 3) assigned serial numbers in preparation for processing.

HANDLING OF SCHEDULES

Always arrange ample clear space and elbow room on your desk or table. Schedules should never be handled for one operation if there are schedules in any other stage of work close by where the two sets of material could be confused.

Work only in good light, and if possible arrange your desk or other work surface in such a way that checklists, master copies of schedules or other reference material can be stood or hung against the wall immediately behind it. Such material should be mounted on cardboard for easy handling.

OFFICE NOTATIONS

It is good practice to use a red or other dark colored pencil for your notations on schedules in the receiving and checking operations described under headings B to E below. In this way if you make an insertion or a self-evident correction on a schedule there can be no confusion as to who made the entry. Colored pencils should *not* be used for serial numbers or for operations of the processing phase except where specified.

Avoid notations in a space on the schedule which will show through the windows of the scoring template *unless* the notation is intended to affect scoring. If the template for your study is not at hand when you begin work, refer to Figures C22 and C23 to see which parts of the schedules will not show through the template and can thus be used for your notes.

FILE DUMMIES

Follow strictly, in the checking operations described below and in all later work, the scheme of dummy sheets for schedules out of their block folder, as described in Appendix C-1. Make this a habit from the outset and it will save you much time, confusion and nervous energy.

Insist that enumerators return dummy sheets for any schedules which they keep in the field after returning the rest of an assignment. Supply a dummy for any schedule which you remove from its block folder for correction by the enumerator or any other purpose.

Handling of dummy sheets may be easier if during data collection and processing you make it a practice to place the Structure Schedules in the block folder with the hinge of the Structure Schedules downward (open side of the Structure Schedule at the top). In this way you can insert a Unit Schedule and remove its dummy without removing the Structure Schedule from the block folder.

File the dummy sheets on end, with the margin projecting above the schedules. Dummies will thus clearly mark all missing material.

Before returning any schedule to its block folder to replace its dummy, make sure that the schedule has been carried to the same stage of checking or processing as the remainder of the schedules in that folder. This stage will be indicated by the file guide in front of the folder, and also by entries on the Progress Control Table for the block in question.

B. Issuance and Return of Schedules

You will be given special instructions on issuing schedules to the field staff for enumeration, and on receiving completed schedules. Details of assignment and reception, varying with conditions of the study, will be settled during the consulting period.

C. Check for Conformity with Assignment

STRUCTURE SCHEDULES

When you receive the completed schedules for a block or other assignment from the enumerator, check whether

[4] This and later sections of Appendix C are addressed directly to the chief clerk and other members of the office staff. It is assumed that the chief clerk will have received a general understanding of the schedules and operations through a demonstration by the consultant, or by reading the appropriate sections of Chapters III-V.

the correct number of Structure Schedules has been returned.

If your study does not use sampling, a check must be made to see that each dwelling structure in the block is represented by a Structure Schedule or enumerator's dummy sheet. If the chief inspector or other field supervisor is not responsible for this, you should have a map showing all structures in each block, and the schedules returned should be checked against the map.

In a sampling study, the structures to be enumerated will usually have been assigned in the office, and you will check off on the assignment list or map that a schedule or dummy has been returned for each assignment.

In any case, check each Structure Schedule heading for the following:

Are district number and block number correct for the area assigned to the enumerator?

Is street name one which occurs in the block indicated by the block number? If your reference map shows street numbers within the block, check for agreement of address with block number.

UNIT SCHEDULES

Next check the Unit Schedules within each Structure Schedule to see that the correct number of these has been returned (ordinarily the same number as total of living units shown by item S1). Be sure that the address, district number and block number for each Unit Schedule agree with those of the structure.

If any Dwelling Unit Schedule is checked Vacant (in heading) or shows (in Remarks) *Recall made* or *Refused*, put that schedule behind other Unit Schedules for the structure.[5] If a rooming unit occurs in the structure, put its schedule in front of the others. (See footnote 37). If this rearrangement disturbs the sequence of inspection numbers in Unit Schedule headings it does not matter. The purpose is to insure that in later handling the master (first) punch card for each structure will be prepared for an occupied and scorable dwelling unit, or for a rooming unit, if such occurs in the structure. After this rearrangement, preserve the new sequence of schedules in all further handling by starting each operation with the Unit Schedules face up and placing them in a separate pile face down after each operation is performed.

PROGRESS RECORD; FILING

When the operations above have been completed for a block folder, check that block on the Progress Control Table on the line Conformity Checked. Refile the block folder behind the corresponding file guide, unless you are proceeding at once with the other checking operations.

[5] In a sampling study you may be given special instruction concerning substitute assignments and reissuance of new schedules for units not completed because of families not at home on recall or because of information refused. Such substitution and reissuance will never be used, however, for vacant units.

D. Checks for Completeness and Consistency

The two checking operations described below must be done as separate operations, that is, by a separate scanning of each schedule. Both may be done for the schedules of each structure, however, before proceeding to the next structure. This will ordinarily be more economical than handling structures for the first check and then rehandling them for the second.

CHECK FOR COMPLETENESS OF ENTRIES

The purpose of this check is to assure that no specified entry has been overlooked by the enumerator and thus that no item will be needlessly unscorable. You may wish to prepare a master set of schedules showing any item for which entries are not required in your study, or special entries for local items. Correct entries for the schedule items are illustrated in the Field Procedures, Appendix B, with which you should be familiar before checking schedules.

Scan each Structure and Unit Schedule, column by column, to make sure that no item or subitem is without the required entry. The schedules are designed to make this a quick and easy operation for most items.

Note that items D9 and R9 require special watchfulness. Follow down the column for each room which carries an X in the top line of the item, to make sure that no subitem has been missed. In scanning D9 and R9 check particularly for completeness and accuracy in the Total column at the right. If the entries in the room columns are complete for a subitem of D9 or R9, but the total has not been entered at the right, you may do this. If NR (not reportable) is shown for any room in any subitem, NR must appear in the Total column for that subitem.

Note also in item S2 that if the structure has four or more stories the total number of stories must be followed by the letter *w* or the letter *e* for walk-up or elevator.

Note also in S16a, if used, that one or two sides must be encircled to show southerly exposure. If this has been overlooked you can sometimes supply the information from maps in the office, but you are entitled to return any schedule to an enumerator for correction of such omission.

Note that the enumerator's name or initials and the date of inspection should appear both on the Structure and Unit Schedules.

If a required item or subitem is blank, return the schedule to the enumerator for completion, replacing it with a dummy in the file.

If NR is recorded for any schedule entry, make sure that these letters are in a position which will show through the template window.

Schedules not scorable. Note that the NR entry in either of two places in the Dwelling or Rooming Unit Schedule will make it impossible to score part or all of

the occupancy items on the Unit Appraisal Form. This applies if the dimensions of any room are not reported or if the total number of occupants is not reported. If the symbol NR appears in either of these places, write *Score incomplete* in the schedule heading below Serial Number U. Make this entry also for any Unit Schedule which shows *Recall made, Refused* or *Not available for occupancy* in the Remarks space and is generally unscorable.

Do not make the *Score incomplete* entry in the heading if the NR symbol appears in other single items than those specified above.

Remarks: editing. Scan the entries under Remarks. If anything written there would affect the scoring of an item, you may be authorized by the director to change the field entry for that item, using colored pencil as specified above. Remarks entries will seldom have this effect, but there may be local conditions in which it will be true. In adjusting a field entry in this fashion, do not erase the original entry for that item unless it is in the space needed for your colored entry.

If several local items are printed in the Remarks space of the schedules, enumerators may be authorized to continue Remarks on the back of the schedule, and you may need to look there.

You may be authorized by the director to discourage entries under Remarks which serve no purpose, and which needlessly take your time in editing the schedules.

CHECK FOR INTERNAL CONSISTENCY

The purpose of this check is primarily to disclose misunderstandings on the part of enumerators in the early stages of data collection. It may also show up careless or occasional dishonest work. The nature of the schedules is such that certain entries in one place must be accompanied by certain entries in other places. Inconsistent treatment of such related items might give nonsensical results in later processing or interpretation.

While the consistency check should be made for all schedules in the early stages of enumeration, the director may, on your recommendation, authorize discontinuing it when the field work is running smoothly.

The following comparisons and questions are suggested as a useful check of consistency. They are not intended as a rigid guide: in a particular locality some of these items may not behave consistently and you may drop some or select others more useful, including local items if these have been added.

Structure Schedule. Is the treatment of item S10 (enumerated or not applicable) apparently consistent with the indicated type of structure (S1 and S2)? Specifically, if S2 shows three or more stories, is S10 reported in full?

Is the treatment of S11 (enumerated or not applicable) apparently consistent with the type of structure (S1 and S2)?

If S6 is checked Yes, S15 should ordinarily be reported in full.

Dwelling Unit Schedule. If S10 showed X's in two boxes of the top line, the No entry should be expected in D6, except possibly in first floor or basement dwelling units.

Is the number of units sharing toilet or bath (D2 and D3) consistent with entries under S5 of Structure Schedule? If the number of toilets or baths is less than the number of dwelling units, the latter divided by the former will normally give the number which will be expected as the entry for sharing in D2 or D3.

Do the entries in D13 and D13a (if used) agree?

The worst condition shown in D11 for any dwelling unit should appear in S13.

If a hot tub or shower (D3) appears inside the unit, Inside Hot should be checked in D4.

Rooming Unit Schedule. If this is used in your study, a similar consistency check can be devised for it, in line with the character of rooming houses in your city.

Reference data. A set of mounted master schedules can be prepared in which the related items are linked by colored lines or circles, or the Committee's consultant can assist in preparing a cardboard template which will speed this consistency checking operation.

Work record. After the consistency check, sign your name or initials in the Office Check space at the foot of each schedule.

REISSUANCE OF SCHEDULES FOR COMPLETION OR CORRECTION

Return to the enumerator any schedule on which he has omitted an entry or given inconsistent entries, for his completion or correction. Indicate the omission or error by encircling the item affected or by a concise note on the face of the schedule if necessary—avoiding spaces which will appear in the template window as discussed above. If the correction involves only a Unit Schedule, return only that schedule and dummy it in the file; if a Structure Schedule is involved, you may wish to return all schedules for that structure, with one dummy for the lot.

Return to the field worker any schedule with dim entries, illegible numbers, careless placement of entries in the spaces provided, oversize figures or X's, or any other condition which hinders your checking or would impede later calculations or scoring in the template. You are entitled to careful field entries, and the director will support you in a stiff policy on this matter. If the field crew is made to understand from the start that neat work is required, and if a careless worker is forced to redo a few schedules, the time and effort spent will be repaid in smoother handling of materials through all later stages of the work.

Any schedule which suggests willful carelessness or dishonest reporting can be referred immediately to the director or field supervisor for investigation, or with the director's consent such a schedule may be included

FIELD CHECK

DWELLING SERIAL LIST 1946 BLANKVILLE HOUSING SURVEY Sheet 1

Census Tract	District	Block	Address	Serial Number Struc.	Serial Number Units	Score Incomplete	Total Occupants	Remarks
24	1	1	312 Oak Street	1	1-4	–	17	
			314 " "	2	5	–	4	
			318 " "	3	6, 7	–	9	
			Total	3	7	–	30	

FIGURE C8. DWELLING SERIAL LIST

among those for field checking, described in the next section.

PROGRESS RECORD; FILING

Record each block checked as above on the Progress Control Table on the lines Completeness Checked and Consistency Checked. Return the block folder with schedules to the file behind the correct file guide. Note that at this stage block folders may contain dummy sheets for schedules reissued to the enumerator. When these schedules are returned they must, of course, be checked for the corrections specified before refiling and removal of their dummy sheets.

E. Field Check

Field checking consists of an independent reinspection of a small proportion of the dwellings by the field supervisor or a specially designated enumerator, who returns duplicate schedules for comparison with the originals. Its purpose is to assure that field instructions are understood and properly carried out, and to protect the accuracy of the findings generally.

While you will be responsible for the office end of this operation, instructions for it are not given here. They are carried in Chapter III. The director will instruct you in the method of field checking.

F. Assignment of Serial Numbers

GENERAL INSTRUCTIONS

After checking, serial numbers are assigned to Structure and Unit Schedules. Each Structure Schedule is assigned a Serial Number S starting with number 1 for the first schedule and continuing in an unbroken series to the last schedule of the study. This number is re-

corded in black pencil at the upper right-hand corner of the schedule.

A Serial Number U is assigned to each Unit Schedule, using the entry line provided in the upper right-hand corner. This series of numbers is independent of the structure serial numbers; it begins also with number 1 for the first unit of the first structure and continues in an unbroken series through the last Unit Schedule of the study. Rooming Unit Schedules are not numbered in a separate series, but in a continuous series with dwelling units.

Serial numbers are recorded on the Dwelling Serial List, as instructed in later paragraphs.

Before serializing, all schedules reissued to enumerators or removed for field checking or other purposes must be returned to their block folders and their dummy sheets cleared. As noted above, no schedule should be restored to its block folder until it has been checked to the same stage as the remainder of the block (indicated by the file guide in front of the block folder).

If Structure Schedules are not in order of address by streets within each block, they should be so arranged before serializing.

Ordinarily, serial numbers will follow the general sequence of enumeration, the first block completed in the field receiving the lowest serial numbers. The director may, however, specify a different order of serializing.

Serial numbers are applied to all schedules in the block folders, whether fully enumerated or marked Score incomplete for vacancy or other reasons.[6]

ENTRIES ON THE DWELLING SERIAL LIST AND SCHEDULES

On the first sheet of the Dwelling Serial List (Figure C8), enter the block and district number of the first block to be serialized, with its census tract or other reference number if needed. Enter on the first line the address of the first structure. Enter number 1 under structure serial number: write this number in the upper right corner of the Structure Schedule, on the first of the two entry lines provided. Open the Structure Schedule, and enter successive numbers, starting with 1, on each Unit Schedule for that structure. Record these numbers on the first line of the Dwelling Serial List in the column for unit serial numbers. If three or more units occur in the structure, show only the numbers for the first and last of these, separated by a hyphen.

Record in the column Score Incomplete the number of Unit Schedules in the structure which are marked Score Incomplete, if any. Upon completing the listing for each block, totals should be shown for the block on the last page. Totals should be entered for the columns on Structures, Units, Score Incomplete and Total Occupants. Show the count of such schedules, not the serial numbers. Where no such schedules occur, enter a dash line.

You may be instructed to count the number of occupants in all dwelling and rooming units of the structure (totals of D13 and R13) and enter the total number on the first line of the serial list in the column provided. This information will be used by the environmental survey staff.

When structures and units are serialized in other blocks, a new page of the dwelling serial list should be started. This procedure should be followed and the totals shown at the end of each block listing. It is mandatory that a separate binder be kept for Dwelling Serial Lists and the pages of this binder be arranged so that structure and unit serial number listings are in numerical order. When it is necessary to serialize at later dates, the last serial number used may be easily determined by referring to the last listed block in the Dwelling Serial List binder.

The entry line below Serial Number S on the Structure Schedule is provided for recording the first and last serial numbers of units within the structure if this is desired.

PROGRESS RECORD; FILING

Record each block, as it is serialized, on the Progress Control Table, and return the block folder to the file behind the guide Serialized; Ready to Process.

Sheets of the Dwelling Serial List should be numbered in the upper right corner and filed in an 11 x 8½ inch ringbook.

[6] Duplicate schedules from the field checker or incomplete schedules for which substitute assignments were made from a reserve sample should not, of course, be in the block folders but in the separate dead file provided for them.

Appendix C-3-A

PROCESSING: INTRODUCTION

The Processing Operations

STEPS IN PROCESSING

Processing consists of four series of operations: 1) calculations from certain field entries on the dwelling schedules to prepare these for scoring; 2) scoring of the Structure and Unit Schedules through scoring templates to produce a Unit Appraisal Form for each dwelling or rooming unit; 3) preparation of a Punching Code Sheet which translates the appraisal form entries into a guide for preparing the statistical punch card; 4) punching of the card for each unit. Upon completion of processing, punch cards are ready for tabulation and analysis, and the dwelling schedules become inactive.

Training and practice in each operation will ordinarily be given by the consultant of the Committee on the Hygiene of Housing to at least one member of the office staff, and this training can be passed on by that person to other staff members.

EFFECT OF MACHINE TABULATION

The calculations and scoring operations will be the same whether marginal punch cards or Hollerith machine punch cards are to be used for tabulation; coding and card-punching operations, however, will differ according to the type of punch card used. If machine tabulation is to be employed, Appendix C-3-D, on coding and card-punching, will be supplanted by the consultant's instructions to the tabulating machine operator. The code sheet and marginal punch card explained in that appendix will be replaced by a code sheet and Hollerith type card designed locally to meet the requirements of the study, and the standard card-punching operations will be adapted as necessary to the subject matter of these schedules.

SPECIMEN ENTRIES

Each processing operation is illustrated in later sections of Appendix C-3 by specimen forms on which the operation has been completed, and these examples are explained in the instructions which follow. You should fully understand each specimen before attempting to process schedules or other forms for any operation.

Materials Used

FORMS AND EQUIPMENT

The basic materials used in processing are the dwelling schedules (checked and serialized as specified in Appendix C-2), the Structure and Unit Scoring Templates, and the Unit Appraisal Forms and Unit Punch Cards. To understand the functions of these, you should read (or have the director explain to you) Section 2 of Chapter IV. If you have not participated in the training of field workers or in office work of the data collection phase, you should also familiarize yourself with Section 2 of Chapter III.

The adding or calculating machine, or a slide rule, may be used in numerous processing operations.

REFERENCE DATA

The reference tables and other guides needed for processing are given in Figures C9-C15. Separate copies of these figures are to be made (usually by photostat) and mounted for convenient reference on your desk. Processing Tables 1 and 4 (Figures C9, C12) may not be needed in some studies. The Coding and Punching Guides (Figures C13-C15) may need adaptation to local conditions, with the advice of the consultant, before they are copied.

Organization of Work; Controls

SEQUENCE OF OPERATIONS

Work should be done in the order given by the full instructions of Appendices C-3-B through C-3-D. In general, each calculation or other operation should be carried through for a block or group of blocks before the next step is undertaken. In some cases, however, it may save handling of schedules if (with the consent of the director) a minor operation such as calculation of rent per room per month is performed at the same time as some other operation.

HANDLING OF SCHEDULES

The schedules should always be kept in order by serial number. In each operation start with a block folder open and the schedules face up at one side of the folder. After a schedule is processed, place it face down on the opposite side of the folder or in convenient position at your right hand, ready for return to the block folder.

During processing it may be desirable to continue filing the Structure Schedules hinge downward in the block folders, to permit easy insertion and removal of file dummy sheets for individual Unit Schedules.

CHECKING THE WORK

Processing operations are checked not by a separate later handling of the schedules, as in the data collection phase, but by repeating or rechecking the calculations or entries of each operation before proceeding to the next schedule or other form. In most cases this can be done rapidly, and it is part of your job to develop reasonable speed in doing it. Do not skimp such checking or begrudge the time required for it; it is insurance against confusion or inaccurate results in later stages of the work.

FILING

Throughout processing, schedules are filed in their block folders, and file guides and Progress Control Tables are used in the same manner as during collection of data.

The filing system for appraisal forms and punch cards will vary with conditions of the study, and an appropriate scheme, with the equipment necessary, will be outlined by the consultant.

USE OF PROGRESS CONTROL TABLE

At the end of the instructions for each operation, it is specified that a record is to be made on the Progress Control Table for each block processed, and that the block folder should be returned to the schedule processing file, behind the appropriate file guide. The entries on the control table should be made exactly as specified, block-by-block and operation-by-operation, to avoid any possibility of later confusion. The schedules and block folders need not, of course, be literally returned to the file after each operation is performed on them. A block or group of blocks may be kept out and carried through several operations at one session, then returned to the file behind the guide which represents the last operation that has been completed for these schedules.

FIGURE C9. PROCESSING TABLE 1

Daylight Obstruction: Item S16a: column f values

ONE STORY REPORTED STRUCTURE

1 STORY ADJACENT		2 STORY ADJACENT		3 STORY ADJACENT		4 STORY ADJACENT	
distance	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*
1	9.0	1	18.0	1	27.0	1	36.0
2	4.5	2	9.0	2	13.5	2	18.0
3	3.0	3	6.0	3	9.0	3	12.0
4	2.3	4	4.5	4	6.8	4	9.0
5	1.8	5	3.6	5	5.4	5	7.2
6	1.5	6	3.0	6	4.5	6	6.0
7	1.3	7	2.6	7	3.9	7	5.1
8	1.1	8	2.3	8	3.4	8	4.5
9	1.0	9	2.0	9	3.0	9	4.0
10	.9	10	1.8	10	2.7	10	3.6
11	.8	11-12	1.5	11-12	2.3	11-12	3.1
12-13	.7	13-15	1.3	13-14	2.0	13-14	2.6
14-16	.6	16-18	1.1	15-16	1.7	15-17	2.2
17-20	.5	19-22	.9	17-20	1.4	18-21	1.8
21-25	.4	23-30	.7	21-27	1.1	22-27	1.4
26-35	.3	31-45	.5	28-38	.8	28-40	1.0
36-59	.2	46-71	.3	39-67	.5	41-72	.6
60+	0	72+	0	68-99	.3	73-99	.4
				100+	0	100+	0

TWO STORY REPORTED STRUCTURE

1 STORY ADJACENT		2 STORY ADJACENT		3 STORY ADJACENT		4 STORY ADJACENT	
distance	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*
1	4.5	1	13.5	1	22.5	1	31.5
2	2.3	2	6.8	2	11.3	2	15.8
3	1.5	3	4.5	3	7.5	3	10.5
4	1.1	4	3.4	4	5.6	4	7.9
5	.9	5	2.7	5	4.5	5	6.3
6	.8	6	2.3	6	3.8	6	5.3
7	.6	7	1.9	7	3.2	7	4.5
8	.6	8	1.7	8	2.8	8	3.9
9	.5	9	1.5	9	2.5	9	3.5
10	.5	10	1.4	10	2.3	10	3.2
11-12	.4	11	1.2	11-12	2.0	11	2.9
13-15	.3	12	1.1	13-15	1.6	12-13	2.5
16-18	.3	13-15	1.0	16-18	1.3	14-16	2.1
19-30	.2	16-18	.8	19-22	1.1	17-19	1.7
31-45	.1	19-22	.7	23-30	.8	20-25	1.4
46+	0	23-30	.5	31-45	.6	26-35	1.0
		31-53	.3	46-89	.3	36-57	.7
		54+	0	90+	0	58-99	.4
						100+	0

THREE STORY REPORTED STRUCTURE

1 STORY ADJACENT		2 STORY ADJACENT		3 STORY ADJACENT		4 STORY ADJACENT	
distance	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*
1	3.0	1	9.0	1	18.0	1	27.0
2	1.5	2	4.5	2	9.0	2	13.5
3	1.0	3	3.0	3	6.0	3	9.0
4	.8	4	2.3	4	4.5	4	6.8
5	.6	5	1.8	5	3.6	5	5.4
6	.5	6	1.5	6	3.0	6	4.5
7	.4	7	1.3	7	2.6	7	3.9
8	.4	8	1.1	8	2.3	8	3.4
9	.3	9	1.0	9	2.0	9	3.0
10	.3	10	.9	10	1.8	10	2.7
11-12	.3	11	.8	11-12	1.5	11-12	2.3
13-15	.2	12-13	.7	13-15	1.3	13-14	2.0
16-20	.2	14-16	.6	16-18	1.1	15-16	1.7
21-29	.1	17-20	.5	19-22	.9	17-20	1.4
30+	0	21-25	.4	23-30	.7	21-27	1.1
		26-35	.3	31-45	.5	28-38	.8
		36+	0	46-71	.3	39-67	.5
				72+	0	68-99	.3
						100+	0

FOUR STORY REPORTED STRUCTURE

1 STORY ADJACENT		2 STORY ADJACENT		3 STORY ADJACENT		4 STORY ADJACENT	
distance	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*	*distance*	*col. f value*
1	2.2	1	6.8	1	13.5	1	22.5
2	1.1	2	3.4	2	6.8	2	11.3
3	.7	3	2.3	3	4.5	3	7.5
4	.6	4	1.7	4	3.4	4	5.6
5	.5	5	1.4	5	2.7	5	4.5
6	.4	6	1.1	6	2.3	6	3.8
7	.3	7	1.0	7	1.9	7	3.2
8	.3	8	.9	8	1.7	8	2.8
9	.2	9	.8	9	1.5	9	2.5
10	.2	10	.7	10	1.4	10	2.3
11-12	.2	11-12	.6	11	1.2	11-12	2.0
13-14	.2	13-15	.5	12	1.1	13-15	1.6
15-21	.1	16-19	.4	13-15	1.0	16-18	1.3
22-26	.1	20-27	.3	16-18	.8	19-22	1.1
27+	0	28-45	.2	19-22	.7	23-30	.8
		46-67	.1	23-30	.5	31-45	.6
		68+	0	31-53	.3	46-89	.3
				54+	0	90+	0

FIGURE C10. PROCESSING TABLE 2

Room Areas: Items D9, R9

8/8 : 64	9/9 : 81	11/11 : 121	12/12 : 144	13/13 : 169	14/14 : 196	15/15 : 225	16/16 : 256
8/9 : 72	9/10 : 90	11/12 : 132	12/13 : 156	13/14 : 182	14/15 : 210	15/16 : 240	16/17 : 272
8/10 : 80	9/11 : 99	11/13 : 143	12/14 : 168	13/15 : 195	14/16 : 224	15/17 : 255	16/18 : 288
8/11 : 88	9/12 : 108	11/14 : 154	12/15 : 180	13/16 : 208	14/17 : 238	15/18 : 270	16/19 : 304
8/12 : 96	9/13 : 117	11/15 : 165	12/16 : 192	13/17 : 221	14/18 : 252	15/19 : 285	16/20 : 320
8/13 : 104	9/14 : 126	11/16 : 176	12/17 : 204	13/18 : 234	14/19 : 266	15/20 : 300	16/21 : 336
8/14 : 112	9/15 : 135	11/17 : 187	12/18 : 216	13/19 : 247	14/20 : 280	15/21 : 315	16/22 : 352
8/15 : 120	9/16 : 144	11/18 : 198	12/19 : 228	13/20 : 260	14/21 : 294	15/22 : 330	16/23 : 368
8/16 : 128	9/17 : 153	11/19 : 209	12/20 : 240	13/21 : 273	14/22 : 308	15/23 : 345	16/24 : 384
8/17 : 136	9/18 : 162	11/20 : 220	12/21 : 252	13/22 : 286	14/23 : 322	15/24 : 360	16/25 : 400
8/18 : 144	9/19 : 171	11/21 : 231	12/22 : 264	13/23 : 299	14/24 : 336	15/25 : 375	16/26 : 416
8/19 : 152	9/20 : 180	11/22 : 242	12/23 : 276	13/24 : 312	14/25 : 350	15/26 : 390	16/27 : 432
8/20 : 160	9/21 : 189	11/23 : 253	12/24 : 288	13/25 : 325	14/26 : 364	15/27 : 405	16/28 : 448

FIGURE C11. PROCESSING TABLE 3

Required Room Areas: Items D9, R9

DWELLING UNITS: Requirement According to Number of Rooms in Unit

TOTAL NO. ROOMS IN UNIT	MINIMUM STANDARD AREA: SQUARE FEET						
	KITCHEN AND LIVING ROOM			DINING ROOM	BEDROOMS AND OTHER		
	if only one present	*if both present* Kitchen	*if both present* Living Room		One @	Remainder	
1 A	170	—	—	—	—		
B	—	—	—	—	170		
2 A	150	—	—	—	120		
B	—	70	170	—	—		
C	—	—	—	—	150	120	
3 A	170	—	—	—	120	100	
B	—	70	150	—	120		
C	—	—	—	—	170	120	100
4	190	70	150	70	120	100	70
5	220	90	170	80	120	100	remainder @ 70
6-8	230	90	180	100	120	2 @ 100	remainder @ 70
9	230	90	180	100	120	3 @ 100	remainder @ 70
10-11	240	90	200	120	120	4 @ 100	remainder @ 70
12 or more	240	90	200	120	120	5 @ 100	remainder @ 70

ROOMING UNITS: Requirement According to Bed Capacity of Sleeping Room[a]

Sleeping Room:

Bed Capacity	Minimum Standard Area
1 person	120 square feet
2 persons	160 " "
3 "	200 " "
4 "	240 " "
Additional persons	30 additional square feet per person
Nonsleeping Room	70 square feet

[a] Rooming unit requirements may be altered to conform with standard of local regulations.

FIGURE C12. PROCESSING TABLE 4

Conversion of Weekly to Monthly Income: Nearest Dollar: Items D13a, D13b

Weekly	*Monthly*	*Weekly*	*Monthly*	*Weekly*	*Monthly*	*Weekly*	*Monthly*	*Weekly*	*Monthly*	*Weekly*	*Monthly*
$ 1	$ 4	$18	$78	$35	$152	$52	$225	$69	$299	$85	$368
2	9	19	82	36	156	53	230	70	303	86	373
3	13	20	87	37	160	54	234	71	308	87	377
4	17	21	91	38	165	55	238	72	312	88	381
5	22	22	95	39	169	56	243	73	316	89	386
6	26	23	100	40	173	57	247	74	321	90	390
7	30	24	104	41	178	58	251	75	325	91	394
8	35	25	108	42	182	59	256	76	329	92	399
9	39	26	113	43	186	60	260	77	334	93	403
10	43	27	117	44	191	61	264	78	338	94	407
11	48	28	121	45	195	62	269	79	342	95	412
12	52	29	126	46	199	63	273	80	347	96	416
13	56	30	130	47	204	64	277	81	351	97	420
14	61	31	134	48	208	65	282	82	355	98	425
15	65	32	139	49	212	66	286	83	360	99	429
16	69	33	143	50	217	67	290	84	364	100	433
17	74	34	147	51	221	68	295				

FIGURE C13. CODING GUIDE[a]

RENT PER MONTH

Amount	*Class*
NR or Blank	0
$ 0.01 — $ 9.99	1
10.00 — 19.99	2
20.00 — 29.99	2 1
30.00 — 39.99	4
40.00 — 49.99	4 1
50.00 — 59.99	4 2
60.00 or more	4 2 1

RENT PER WEEK

Amount	*Class*
NR or Blank	0
$ 0.01 — $ 2.29	1
2.30 — 4.59	2
4.60 — 6.89	2 1
6.90 — 9.19	4
9.20 — 11.49	4 1
11.50 — 13.79	4 2
13.80 or more	4 2 1

MONTHLY INCOME

Amount	*Class*
NR or Blank	0
$ 0.01 — $ 49.99	1
50.00 — 99.99	2
100.00 — 149.99	2 1
150.00 — 199.99	4
200.00 — 249.99	4 1
250.00 — 349.99	4 2
350.00 or more	4 2 1

4) SUBTOTAL SCORES
10-Point Classes

Score	*Class*
0	0
1 – 9	1
10 – 19	2
20 – 29	2 1
30 – 39	4
40 – 49	4 1
50 – 59	4 2
60 – 69	4 2 1
70 – 79	8
80 – 89	8 1
90 – 99	8 2
100 – 109	8 2 1
110 – 119	8 4
120 – 129	8 4 1
130 – 139	8 4 2
140 or more	8 4 2 1

5) TOTAL SCORES
20-Point Classes

Score	*Class*
0	0
1 – 19	1
20 – 39	2
40 – 59	2 1
60 – 79	4
80 – 99	4 1
100 – 119	4 2
120 – 139	4 2 1
140 – 159	8
160 – 179	8 1
180 – 199	8 2
200 – 219	8 2 1
220 – 239	8 4
240 – 259	8 4 1
260 – 279	8 4 2
280 or more	8 4 2 1

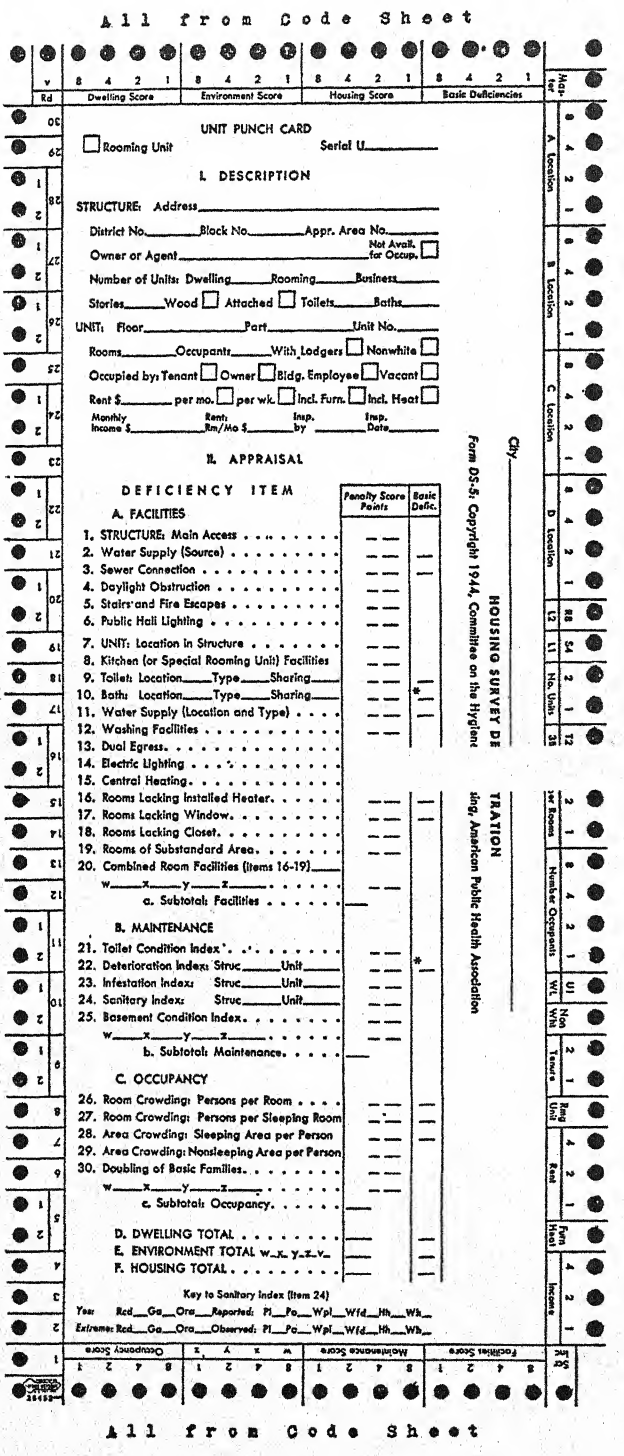
6) RENT: ROOM PER MONTH (Optional)

Amount	*Class*
NR or Blank	0
$ 0.01 – $ 1.99	1
2.00 – 3.49	2
3.50 – 4.99	2 1
5.00 – 6.99	4
7.00 – 8.99	4 1
9.00 – 10.99	4 2
11.00 or more	4 2 1

7) LOCAL ITEMS (Optional)

Item	Condition Qualifying for *Class 1*	*Class 0*
w	———	———
x	———	———
y	———	———
z	———	———

[a] For possible additions to this guide, covering special rent classes of rooming units, see text footnote 32, Appendix C-3-D.



Punching Classes	Reference on Code Sheet or Appraisal Form
From Code Sheet	Master Card
Self-coding	District No.[1]
Self-coding	Block No. (Tens)
Self-coding	Block No. (Units)
Self-coding	Appraisal Area No.[2]
(Reserved)	R8/L2, S4/L1
0: 1 or 2 DU 1: 3 to 6 DU 2: 7 or more DU	Number of Units[3]
1: 7 Stories or more Wood	Stories; Wood
Self-coding	Rooms
Self-coding	Occupants
1: With Lodgers	With Lodgers
1: Nonwhite	Nonwhite
0: Tenant; 1: Owner 2: Bldg.Empl.; 3: Vacant	Occupied by
-----	Rooming Unit[4]
From Code Sheet	Rent
1: Incl. either	Incl. Furn.; Incl. Heat
From Code Sheet	Monthly Income

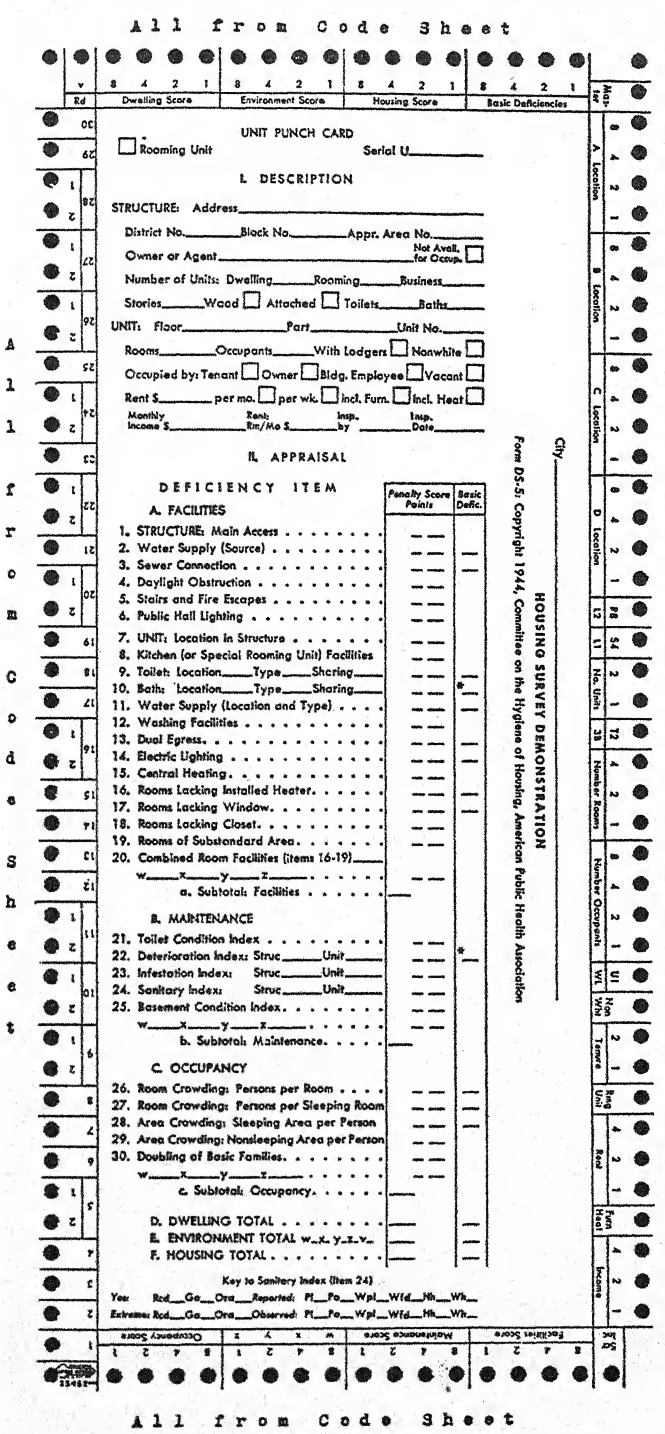
[1]Assignment of the four fields for location punching can be varied to meet the needs of a given study.

[2]Punching deferred until analysis: after primary test of quality difference.

[3]Under standard scheme, class 3 of this field is reserved for rooming units (see Figure C15). Alternative scheme may be desirable where rooming units do not occur.

[4]Dwelling units not eligible for punch in this field.

FIGURE C14. PUNCHING GUIDE: DWELLING UNITS



Punching Classes	Reference on Code Sheet or Appraisal Form
From Code Sheet	Master Card
Self-coding	District No.
Self-coding	Block No. (Tens)
Self-coding	Block No. (Units)
Self-coding	Appraisal Area No.
(Reserved)	R8/L2, S4/L1
3: RU: any number	Number of Units[1]
1: 3 Story om Wood	Stories; Wood
Self-coding, or Local Code Substituted Here	Rooms
Self-coding, or Local Code Substituted Here	Occupants
(Reserved)	U1/WL[2]
1: Nonwhite	Nonwhite
0: Tenant; 1: Owner 2: Bldg.Empl.; 3: Vacant	Occupied by
1: Rooming Unit	Rooming Unit
From Code Sheet	Rent
1: Incl. Furn.	Incl. Furn.[3]
(Reserved)	Monthly Income[4]

[1]Rooming units not eligible for punching in classes 0, 1, 2 of this field (see Figure C14).

[2]Can be used to punch large unit with rooms sampled; requires supplementary instructions for scoring.

[3]In rooming units, signifies meals included in rent (boarding house).

[4]Can be used to punch local schedule subitems R1a, R1b, R1c (deficiency item 8); requires supplementary instructions for scoring.

FIGURE C15. PUNCHING GUIDE: ROOMING UNITS

Appendix C-3-B

PROCESSING: CALCULATIONS

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General Instructions

THE OPERATIONS

The calculations described below prepare the schedules for scoring in the templates. They deal with the following schedule items:

Daylight Obstruction, S16a: calculations are made only for those Structure Schedules with supplementary appraisal for this item—usually only a fraction of the total. This item may be omitted entirely in some localities.

Room Facilities, D9, R9: calculations are made for all Dwelling and Rooming Unit Schedules.[7]

Family Income per month, D13b: calculations are made for all Dwelling Unit Schedules for which this item is enumerated. The item may be omitted from some studies.

Average Room Rent, R16: calculations are made (or field entries checked) for all Rooming Unit Schedules.

Rent per Room per Month, D16a: this is a special calculation, not made unless the director chooses a special option in card punching and tabulation. If made it applies to all rented dwelling units.

MATERIALS REQUIRED

The following will be needed: dwelling schedules (checked and serialized, as specified in Appendix C-2); Processing Tables 2 and 3; Processing Table 1 if Daylight Obstruction (item S16a) has been enumerated; Processing Table 4 if Income (item D13a) has been enumerated; adding or calculating machine or slide rule; black and red pencils and scratch pads.

SPECIMEN ENTRIES

Since the calculations for Daylight Obstruction and Room Facilities involve specialized entries, these are fully illustrated by specimen entries from typical schedules. The specimens are given in Figures C16-C21.

[7] Except those marked Score Incomplete.

S2 NUMBER OF STORIES — Total 3 — Nonres. —

S16a DAYLIGHT OBSTRUCTION

Side	This Str.	Adjacent Structure		
	No. of Windows	Height in Stories	Distance in Feet	Horiz. Obstr.
	a	b	c	d
Front	7	3	50	1
Left	18	3	7	1
Right	12	4	20	1/2
Rear	6	—	—	—

(office entries)
Obstruction Factor: Total h/Total e 1.25

Side	Adj. a	Table	f x d	e x g
	e	f	g	h
Front	7	.3	.3	2.1
Left	18	2.6	2.6	46.8
Right	18	1.4	.7	12.6
Rear	6	—	—	—

Total e 49 — Total h 61.5

Example 1

S2 NUMBER OF STORIES — Total 2½ — Nonres. —

S16a DAYLIGHT OBSTRUCTION

Side	This Str.	Adjacent Structure		
	No. of Windows	Height in Stories	Distance in Feet	Horiz. Obstr.
	a	b	c	d
Front	10	—	—	—
Left	7	3	15	1 1/4
Right	—	—	—	—
Rear	8	1	10	1/2

(office entries)
Obstruction Factor: Total h/Total e 0.66

Side	Adj. a	Table	f x d	e x g
	e	f	g	h
Front	15	—	—	—
Left	10	1.6	2.0	20.0
Right	—	—	—	—
Rear	8	.5	.25	2.0

Total e 33 — Total h 22.0

Example 2

S2 NUMBER OF STORIES — Total 4 — Nonres. 1

S16a DAYLIGHT OBSTRUCTION

Side	This Str.	Adjacent Structure		
	No. of Windows	Height in Stories	Distance in Feet	Horiz. Obstr.
	a	b	c	d
Front	14	~~3~~ 2	30	1
Left	6	~~5~~ 4	12	3/4
Right	9	~~4~~ 3	3	1
Rear	11	—	—	—

(office entries) 3
Obstruction Factor: Total h/Total e 1.49

Side	Adj. a	Table	f x d	e x g
	e	f	g	h
Front	14	.3	.3	4.2
Left	6	2.3	1.5	9.0
Right	9	6.0	6.0	54.0
Rear	16	—	—	

Total e 45 — Total h 67.2

Example 3

FIGURE C16. ENTRIES FOR ITEM S16a

Entries for Average Room Rent in rooming units are also illustrated in Figure C19. In reading the detailed instructions for these three items, study these specimens to make sure that you understand why the entries are handled as they are.

Daylight Obstruction: Item S16a

These calculations apply only to Structure Schedules on which the supplementary appraisal of item S16a has been enumerated.

MATERIALS; HANDLING; SPECIMENS

Structure Schedules (checked and serialized) will be needed, together with a mounted copy of Processing Table 1.

Do not separate the Structure Schedules requiring calculation for this item from other schedules. Go through each block folder and calculate the eligible schedules as you come to them. This will avoid disturbing the serial order of schedules. For the same reason, do not remove Unit Schedules from the Structure Schedules.

Specimens of all the entries described below are given in Figure C16. It would be well for you to copy the field entries from these examples onto blank schedules and make the office entries independently from the instructions, checking your final results with those of the specimen.

STANDARD ENTRIES

Column e. This column gives the number of windows on each side of the structure, repeating the field entries in column *a* with adjustment for sides having southerly exposure.

Enter here, for each side of the structure, the value from column *a* of the field entries, with the following change: for any side or sides which have been encircled (in the field entries) for southerly exposure, increase the value by 50 percent. For example, if under *a* the front side shows 7 windows and Front is not encircled, the value 7 is entered opposite Front under *e;* if the right side shows 12 windows under *a* and Right is encircled, the entry 18 is made opposite Right under *e*. If two sides are encircled, the values for both are increased in this manner.

Where the field entry is an odd number and the 50 percent increase would result in a decimal value in column *e* (7 plus 50 percent equals 10.5), enter the next lower whole number (in this case 10). See Example 2, Left Side.

If the number of windows on any side is 0 (dash entry), make dash entries for that side in columns *f, g,* and *h,* as well as in column *e*. See Example 2, Right Side.

Add the four values in column *e,* counting dash lines as 0, and enter the total on the line provided below this column.

Column f. This column is completed by reference to Processing Table 1. It gives for each side of the structure an index figure that shows whether the height and distance of the adjacent structure are such as to obstruct daylight on that side.

From item S2 determine the height of this structure and use the table as follows:

If the structure shows (in item S2) no nonresidential story or not over one-half nonresidential story, refer to the part of the table which applies to a reported structure with the number of stories shown under Total of item S2.[8] From columns *b* and *c* of item S16a (directly above columns *f* and *g*) read the height and distance of the adjacent structure on the front side. Read from the table the column *f* value given for an adjacent structure of that height and distance; enter this value in column *f* for the front side. For example, if the reported structure is of two stories and the adjacent structure on the front side is of three stories and 50 feet away, the value entered for the front will be *.3*.[9]

Repeat this process for each of the other sides having windows.

If the field entries show a dash line in columns *b, c* and *d* for any side, repeat the dash lines in columns *f, g* and *h* for that side (see Example 1, Rear Side). If the table value for any side is 0, enter dash lines in columns *f, g* and *h* for that side. These dash entries, signifying zero, complete the entries for that side.

Column g. This column gives proper weight to the horizontal obstruction factor of adjacent structures (their disposition lengthwise in relation to this structure).

For each side, multiply the value in column *f* by the value (field entry) for that side in column *d;* enter the result, carried to one decimal place, in column *g*.

Column h. This column relates the adjusted number of windows on each side (column *e*) to the character of obstruction on that side, creating a high obstruction index figure for any side which has both a large number of windows and serious obstruction.

For each side, multiply the value in column *e* by the value in column *g;* enter the result, carried to one decimal place, in column *h*. Add the four values in column *h,* counting dash lines as 0, and enter the total on the line provided below this column.

Obstruction factor. Divide the total below column *h* by the total below column *e;* enter the result (carried to *two* decimal places) on the entry line above column *h*.

This factor provides the value which will be scored on the template. It expresses in a single figure the average degree of obstruction for all four sides of the structure. For instance, if most of the windows are on sides with little or no obstruction, the total for column *h* will be small and the total for column *e* relatively large, giving a small obstruction factor and a small penalty score. If, however, most of the windows are on sides with considerable obstruction, the relationship of totals *h* and *e* will be reversed, and the obstruction factor and penalty score will be increased. How this works can be seen by reference to the Structure Scoring Template (Figure C22), item 4.

[8] For a structure with one-half story or more in nonresidential use, see Special Entries, below.

[9] If the adjacent structure is over four stories high, see Special Entries, below.

SPECIAL ENTRIES: COLUMN F

Story in nonresidential use. If item S2 shows more than one-half story in nonresidential use, make adjustments 1) and 2) below before completing columns *g* and *h*.

1) Consider This Structure as being lower than its actual height by the number (or nearest whole number[10]) of stories shown in nonresidential use.

For instance, see Figure C16, Example 3, where a four-story building shows one story of nonresidential use. In such a case the table readings will be taken from that part of the table which applies to the adjusted (lower) story height of the reported structure. In the case given the table readings for this four-story building would be taken as though This Structure were of three stories. If item S2 showed two-thirds of one story in nonresidential use, the same adjustment would be made. If a four-story structure showed two stories in nonresidential use it would be handled for column *f* on the part of the table which covers two-story (reported) structures. When an adjustment of this sort is made, it is good practice to enter the adjusted number of stories for this structure between the field and office entries, in a circle (see Example 3), as a reminder to make special readings from the table and as a record that this has been done.

2) Consider the actual height of the Adjacent Structure on each side as being reduced by the same amount that you have reduced the actual height of the reported structure.

Here too the adjusted height should be recorded on the schedule. Note that in Example 3 the heights of Adjacent Structures have been noted as reduced from 3, 5 and 4 stories, respectively, to 2, 4 and 3 stories. After this adjustment, read the table value for adjusted height of the Adjacent Structure on each side and enter it in column *f*.

In the adjustments specified above, it is assumed that nonresidential uses will be on the ground floor (or in the lower stories if more than one story is in nonresidential use). If in your locality nonresidential uses commonly occur in other parts of structures, you may be instructed by the director to disregard this adjustment.

Adjacent Structure over four stories high. If the Adjacent Structure on any side is over four stories high (actual or adjusted height), make the column *f* entry from the part of the table which applies to a four-story Adjacent Structure.

If the reported structure is over four stories high, daylight obstruction should not have been enumerated for it, and the field entries for S16a can be disregarded.

CHECKING; PROGRESS RECORD; FILING

Office entries for item S16a, whether they consist of

[10] Consider 1½ stories, for example, as 1 story.

copying the field entries or of calculation or table readings, are to be rechecked for each schedule before passing to the next schedule.

When the schedules have been calculated and checked for any block, record that block on the Progress Control Table on the line Daylight Obstruction Calculated.

For each block processed as above, return the block folder to the processing file, behind the guide Daylight Obstruction Calculated.

Room Facilities: Items D9, R9

These calculations apply to all Dwelling Unit Schedules and Rooming Unit Schedules except those which have been annotated during the data collection phase with Score Incomplete in the schedule heading.

MATERIALS; HANDLING; SPECIMENS

Unit Schedules (checked and serialized) will be needed, together with mounted copies of Processing Tables 2 and 3.

Calculate Dwelling and Rooming Unit Schedules without separating these and without removing them permanently from the Structure Schedules. Open each Structure Schedule, process the Unit Schedules in it, and return them to the Structure Schedule. Keep schedules in order by serial number.

Specimens of the standard entries for dwelling units are given in Figures C17 and C18; for rooming units in Figure C19. Special entries for rooming units and dwelling units with more than 12 rooms are illustrated in Figures C20 and C21.

STANDARD ENTRIES: DWELLING UNITS

Sleeping rooms. On this line enter an X for each room which has been checked in the field entries as a bedroom and as having bed capacity of one or more persons. If the combined bed capacity of these rooms equals or exceeds the total number of occupants (item D13), make no X on this line for any other room (see Figure C17, Example 1).

If the combined bed capacity of the bedrooms is less than the total number of occupants, consider the bed capacity of nonbedrooms. On the line Sleeping rooms enter an X for each nonbedroom which has bed capacity that would be needed to accommodate all occupants shown in item D13 (see Example 2). Make this entry even if less than the entire bed capacity of such a nonbedroom is needed to accommodate the occupants. If there is a choice between nonbedrooms with bed capacity, take the room or rooms with smaller dimensions and area. This will permit crediting the larger nonbedrooms toward nonsleeping area, below.

Note that bedrooms may contain bed capacity in excess of that needed to accommodate the occupants. Such bedrooms are nevertheless credited as sleeping rooms. If, however, unneeded bed capacity has been reported in a nonbedroom, that room will not be reported as a sleeping room (for both these conditions see Example 3, Bedroom 3 and Living Room).

The total bed capacity reported may be less than the number of occupants (see Example 4). In such cases, do not check as a sleeping room any nonbedroom which shows 0 bed capacity.

Count the X's on this line and enter the total number of X's in the Total column at the right.

Area: sleeping. For each room which has been checked as a sleeping room, compute the area from the dimensions in the field entries, using Processing Table 2. Enter the results on this line; add the entries on this line and enter the total sleeping area in Total column at the right. This is illustrated in Figure C18, Examples 1 and 2.

Area: nonsleeping. For each room which has not been checked as a sleeping room, calculate and enter the area as described above. Add the entries and record the total in the column at the right. This is illustrated in Figure C18.

Check to make sure that the area of every room in the unit has been computed and credited to either sleeping or nonsleeping area of the unit.

Area: substandard. Determine the total number of rooms in the unit, from the entry line at the upper right corner of item D9. Find the line in Processing Table 3 which corresponds to this number. For each room of the unit, check whether the area (entered on the schedule in one of the two lines above Area: Substandard) equals or exceeds the minimum standard area for that type of room in a unit of the given size. Full explanation of the use of Processing Table 3 is given under the next heading, and specimen entries are given in Figure C18.

Do not consider whether the area of a room is entered as sleeping or nonsleeping area; consider only the type of room under which it is reported by its X in the top line (kitchen, bedroom, etc.).

For each room having an area smaller than the figure given in the table, enter X on the line Area: substandard; for rooms not substandard enter dash lines. Add the X's and enter their total number in the labelled box at the right opposite Dimensions (just below the dotted line).

Use of Processing Table 3. For units of one to three rooms all the usual combinations of rooms are given separately in the table, opposite symbols A, B, C. Check the area requirements for the combination that occurs in this particular unit. For these small units it is assumed that a dining room will not occur. If it does, subject it to the area test for a bedroom.

For units of four rooms and over it is not possible to show all the usual combinations in a compact table. Therefore, you will need to select from the appropriate

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT: 4

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other			Total (ENTER ABOVE)
Rooms in unit (x)	X	X		X	X								
Bed capacity (persons)	—	—		2	2								4
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	—	—	—	—	—	—	—	—	—	—	—	—	
(office entries)													
Sleeping rooms (x)	—	—		X	X								2
Area: sleeping (ft.)													
Area: nonsleeping (ft.)													
Area: substandard (x)													ENTER ABOVE

AREA SUB-STANDARD

D13 SIZE OF HOUSEHOLD
Number of occupants: total 4

Example 1: Normal Bed Capacity in Bedrooms

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT: 4

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other			Total (ENTER ABOVE)
Rooms in unit (x)	X	X		X	X								
Bed capacity (persons)	—	1		2	2								5
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	—	—	—	—	—	—	—	—	—	—	—	—	
(office entries)													
Sleeping rooms (x)	—	X		X	X								3
Area: sleeping (ft.)													
Area: nonsleeping (ft.)													
Area: substandard (x)													ENTER ABOVE

AREA SUB-STANDARD

D13 SIZE OF HOUSEHOLD
Number of occupants: total 5

Example 2: Part of Needed Bed Capacity in Nonbedroom

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT: 5

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other			Total (ENTER ABOVE)
Rooms in unit (x)	X	X		X	X	X							
Bed capacity (persons)	—	1		2	2	1							6
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	—	—	—	—	—	—	—	—	—	—	—	—	
(office entries)													
Sleeping rooms (x)	—	—		X	X	X							3
Area: sleeping (ft.)													
Area: nonsleeping (ft.)													
Area: substandard (x)													ENTER ABOVE

AREA SUB-STANDARD

D13 SIZE OF HOUSEHOLD
Number of occupants: total 4

Example 3: Excess Bed Capacity (Not Used) in Bedroom and Nonbedroom

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT: 4

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other			Total (ENTER ABOVE)
Rooms in unit (x)	X			X	X	X							
Bed capacity (persons)	—			2	2	1							5
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	—	—	—	—	—	—	—	—	—	—	—	—	
(office entries)													
Sleeping rooms (x)	—			X	X	X							3
Area: sleeping (ft.)													
Area: nonsleeping (ft.)													
Area: substandard (x)													ENTER ABOVE

AREA SUB-STANDARD

D13 SIZE OF HOUSEHOLD
Number of occupants: total 7

Example 4: Subnormal Bed Capacity

FIGURE C17. DETERMINATION OF SLEEPING ROOMS: ITEM D9

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT 5

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other			Total
Rooms in unit (x)	X	X		X	X	X							ENTER ABOVE
Bed capacity (persons)													
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	10 / 13	10 / 12	—	9 / 10	9 / 12	9 / 10	—	—	—	—	—	—	
(office entries)													
Sleeping rooms (x)				X	X	X							3
Area: sleeping (ft.)				90	108	90							288
Area: nonsleeping (ft.)	130	120											250
Area: substandard (x)	—	X		X	—	—							ENTER ABOVE

AREA SUBSTANDARD: 2

Example 1

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT 3

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other			Total
Rooms in unit (x)	X			X	X								ENTER ABOVE
Bed capacity (persons)													
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	10 / 15	—	—	9 / 12	8 / 16	—	—	—	—	—	—	—	
(office entries)													
Sleeping rooms (x)				X	X								2
Area: sleeping (ft.)				108	128								236
Area: nonsleeping (ft.)	150												150
Area: substandard (x)	X			—	—								ENTER ABOVE

AREA SUBSTANDARD: 1

Example 2

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT 11

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other 7	8		Total
Rooms in unit (x)	X	X	X	X	X	X	X	X	X	X	X		ENTER ABOVE
Bed capacity (persons)													
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	—	—	—	—	—	—	—	—	—	—	—	—	
(office entries)													
Sleeping rooms (x)				X	X	X	X	X	X	X	X		8
Area: sleeping (ft.)				120	108	90	90	72	70	68	68		686
Area: nonsleeping (ft.)	145	120	90										355
Area: substandard (x)	—	X	X	—	—	—	—	—	X	X	X		ENTER ABOVE

AREA SUBSTANDARD: 5

Example 3

FIGURE C18. DETERMINATION OF SLEEPING AND NONSLEEPING AREAS AND OF ROOMS WITH SUBSTANDARD AREA: ITEM D9

Serial No. U 1473

Sheet 1 of 1

ROOMING UNIT SCHEDULE

153 Pearl Street District No. 3 Block No. 15 Structure No. ____

Part of Floor all Unit No. - Vacant ☐ Sleeping: 8

R9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT 10

	1	2	3	4	5	6	7	8	9	10	11	12	Total
Floor or room no. (no.)	11	12	13	14	15	21	22	23	24	25			ABOVE
No. occupants (persons)	–	2	2	1	3	–	1	2	1	2			R13
Bed capacity (persons)	–	2	2	1	3	–	2	2	2	2			16
Lacking inst. heater (x)													
Lacking window (x)													
Lacking closet (x)													
Dimensions (ft.)	10 / 15	11 / 16	11 / 16	10 / 10	12 / 15	7 / 8	11 / 15	10 / 12	11 / 14	12 / 16			5
Rent: per week ($)	-	4	4	3.5	4	–	4	3.5	4	4			AVG. IN R16
Rent: per month ($)													
Area: sleeping (ft.)		176	176	100	180		165	120	154	192			1263
Area: nonsleeping (ft.)	150					56							206
Area: substandard (x)	–	–	–	X	X	X	–	X	X	–			OPP. DIMENS.

R13 OCCUPANTS
Number of roomers: total 14

R16 AVERAGE ROOM RENT $3.87 Mo. ☐ Wk. ☒

Rent includes meals Yes ☐ No ☒

FIGURE C19. ENTRIES FOR ITEMS R9, R13 AND R16

line of the table the figures which correspond to the combination of rooms in a particular unit.

The table assumes that a living room or kitchen will occur in all units of four rooms or more; if no living room or kitchen is reported in such a unit, one other room must meet the requirement of the living room column of the table.

Kitchen, living room, dining room. In Figure C18, Example 1, the living room is substandard because it fails to meet the 170 foot requirement of the table for living room in a unit of five rooms, but the kitchen meets the test of 90 square feet.

In Example 2, with three rooms and no separate living room, the table requires the kitchen to be 170 square feet. At 150 square feet, as shown in the example, it is substandard.

In Example 3, the kitchen meets the test for a unit of 11 rooms, but both the living room and dining room fail to meet the requirement of the table.

Bedrooms and other rooms. Where several bedrooms (or rooms of other type than considered above) occur in the unit, one such room must be of the largest bedroom size specified, some such room or rooms must be of the second largest bedroom size, and so on. It is not, of course, necessary that the room reported in bedroom column 1 of the schedule shall meet the largest size requirement.

If a bedroom fails to meet one of the size specifications (such as for the largest size, usually 120 square feet) but will meet the requirement for a smaller bedroom, you may credit that room as meeting the specification for the smaller type of room. For an instance of this, see Figure C18, Example 1. In that case, if the 108 square foot bedroom were charged as substandard because it did not meet the 120 square foot test, there would be two substandard bedrooms reported in this unit, since neither of the other bedrooms meets the requirement of 100 square feet for a second bedroom. The more conservative practice followed in the example is correct, under which one of the smaller bedrooms is given the penalty for failing to meet the 120 square foot test and the largest bedroom is credited with meeting the requirements of a second 100 square foot bedroom. In this instance, according to the table, a third bedroom may be as small as 70 square feet, so the third bedroom of this unit is not substandard.

In the unit shown by Example 3, with 11 rooms, the table requires one bedroom to be of 120 square feet and four to be of 100 square feet, while three of the eight bedrooms might be as small as 70 square feet. Bedroom 1 of this unit meets the 120 square foot requirement. Bedroom 2 meets the test for one of the 100 square foot rooms, but three other such rooms are lacking. Bedrooms 3, 4 and 5 are credited as meeting the 70 square foot test, and the lack of three 100 square foot bedrooms is charged against bedrooms 6, 7 and 8. This treatment shows three substandard bedrooms as against the five which would result if the lack of 100-foot rooms had been charged against bedrooms 3, 4 and 5. In that case, not only would bedrooms 3, 4 and 5 have been counted as substandard for the 100 square foot test, but bedrooms 7 and 8 would also be substandard for the 70 square foot test.

Always follow this principle of letting a bedroom satisfy the requirements for a smaller room before charging the deficiencies for the larger bedrooms required.

STANDARD ENTRIES: ROOMING UNITS

Area: nonsleeping. Complete this *second* line of office entries *before* the first line Area: sleeping. If any room is shown in the field entries as having no bed capacity, determine its area from the dimensions, using Processing Table 2, as with dwelling units. Enter this figure on this line. Add these entries and enter the total in the column at the right, as shown in Figure C19.

Note that room dimensions on the Rooming Unit Schedule do not occupy the two bottom lines of field entries, as on the Dwelling Unit Schedule. Do not confuse entries of room rent with room dimensions.

Net number of sleeping rooms. If the unit contains any nonsleeping rooms (as in the case of living and sleeping rooms ensuite, or a general living room for use of the occupants) subtract the number of these nonsleeping rooms from the total number of rooms reported as a field entry in the upper right corner of item R9. Enter the result *in red pencil* in the schedule heading, thus: *Sleeping: 8* (see Figure C19[11]). The purpose of this adjustment is to give the net number of sleeping rooms for scoring item 27 of the appraisal form. The line on the schedule which shows number of sleeping rooms in dwelling units has been removed from the Rooming Unit Schedule to make room for rent data; hence the supplementary entry.

Area: sleeping. Calculate and enter on this line the area of each room with bed capacity. Add these entries and record the total in the column at the right, as shown in Figure C19.

Area: substandard. Compare the area of each room with the figures at the bottom of Processing Table 3. For each sleeping room having area less than that specified for a room of its bed capacity, enter X on the line Area: Substandard. For nonsleeping rooms, if any, enter X only if the area is less than 70 square feet. Add all X's on this line Area: Substandard and enter the number of these in the box at the right opposite Dimensions just below the dotted line, as shown in Figure C19.

[11] In this example, as in others to follow, a red pencil entry is represented (for black-and-white reproduction) by encircling the entry. In practice you need not encircle such entries on a schedule.

SPECIAL ENTRIES FOR LARGE UNITS

Unit with over 12 rooms. If a dwelling or rooming unit contains more than 12 rooms, necessitating the use of two or more sheets of Unit Schedules for item D9 or R9, the office entries, like the field entries, are to be totalled for all rooms onto sheet 1. See Figures C20 and C21 for illustrations.

Rooming unit with over 18 occupants. This will require the following special operations, in addition to those specified above.

1) Calculate the number of persons *per sleeping room.* Carry this figure to two decimal places, thus: *1.80.* Enter this information, *in red pencil,* below the number of roomers (R13), as shown in Figure C20, sheet 1, with the numerals directly below the entry line of item R13. This will permit scoring deficiency item 27 on the appraisal form without the delay of a special calculation at the scoring template for these large units.

2) Calculate sleeping area per person (from the total sleeping area in office entries and from the number of roomers in item R13). Copy the original office entry for total sleeping area in the margin space at the right of R9 (see Figure C20, sheet 1). Erase the original entry and replace it with the new figure (sleeping area per person) *in red pencil.* This will permit scoring deficiency item 28 on the appraisal form without a calculation at the template.

Since nonsleeping area per person is not scored for rooming units, total nonsleeping area need not be adjusted in this fashion for large units.

Dwelling unit with over 18 occupants. The following additional calculations and entries will save time in scoring items 26-28 for the occasional large (or excessively crowded) dwelling unit, in the same fashion as indicated above for large rooming units.

1) Calculate the number of persons per room. Enter this information, *in red pencil,* in the schedule heading, as shown in Figure C21. Carry this value to two decimal places, thus: *Persons per room: 1.27.*

2) Calculate the number of persons per sleeping room, carried to two decimal places. Copy the original office entry for total number of sleeping rooms in the margin space at the right (see Figure C21). Erase the original entry and replace it, *in red pencil,* with the new figure (persons per sleeping room). In Figure C21 these two entries are represented by the numbers *11* and *1.73.*

3) Calculate the total sleeping area per person in (whole) square feet per person. Copy the original office

Note for Recall

Serial No. U 729
Sheet 1 of 2

ROOMING UNIT SCHEDULE

Inspection No. 1 Address 654 Pacific Street District No. 2 Block No. 34 Structure No. 17
Floor 1, 2, 3 Part of Floor All Unit No. – Vacant ☐ Sleeping: 15

R9 ROOM FACILITIES — 1st / 2d — TOTAL NUMBER OF ROOMS IN UNIT 16

		1	2	3	4	5	6	7	8	9	10	11	12	Total ABOVE R13
Floor or room no.	(no.)	1	2	3	4	5	11	12	13	14	15	16		
No. occupants	(persons)	–	2	2	3	2	2	2	1	2	2	2		29
Bed capacity	(persons)	–	2	2	3	2	2	2	2	2	2	2		
Lacking inst. heater	(x)	–	–	–	–	–	–	–	–	–	–	–		1
Lacking window	(x)	–	–	–	–	–	–	–	–	–	–	–		1
Lacking closet	(x)	–	–	X	–	–	X	X	–	–	X	–		6
Dimensions	(ft.)	14 / 18	10 / 16	10 / 16	10 / 16	10 / 14	12 / 15	12 / 15	12 / 15	10 / 16	10 / 16	10 / 16		7
Rent: per week	($)													AVG. IN R16
Rent: per month	($)													
Area: sleeping	(ft.)		160	160	160	140	180	180	180	160	160	160		82 2220
Area: nonsleeping	(ft.)	262												252
Area: substandard	(x)	–	–	–	X	X	–	–	–	–	–	–		OPP. DIMENS.

R13 OCCUPANTS
Number of roomers: total 27
Persons/sleeping rm. 1.80

Sheet 1

Note for Recall

Serial No U 729
Sheet 2 of 2

ROOMING UNIT SCHEDULE

Inspection No. ____ Address 654 Pacific Street District No. 2 Block No 34 Structure No 17
Floor 3 Part of Floor ____ Unit No – Vacant ☐

R9 ROOM FACILITIES — 3d — TOTAL NUMBER OF ROOMS IN UNIT 5

		1	2	3	4	5	6	7	8	9	10	11	12	Total ABOVE R13
Floor or room no	(no)	21	22	23	24	25								
No. occupants	(persons)	2	1	2	1	1								8
Bed capacity	(persons)	2	1	2	2	1								
Lacking inst heater	(x)	–	X	–	–	–								1
Lacking window	(x)	–	1/2	–	–	1/2								1
Lacking closet	(x)	–	X	–	–	X								2
Dimensions	(ft.)	10 / 14	8 / 10	10 / 14	10 / 14	8 / 10								5
Rent per week	($)													AVG. IN R16
Rent. per month	($)													
Area. sleeping	(ft.)	140	80	140	140	80								580
Area nonsleeping	(ft.)													–
Area: substandard	(x)	X	X	X	X	X								OPP DIMENS.

R13 OCCUPANTS
Number of roomers. total 7

Sheet 2

FIGURE C20. ENTRIES FOR ITEMS R9 AND R13: LARGE ROOMING UNIT

Note for Recall

DWELLING SURVEY
WASHINGTON HOUSING ASSOCIATION, WASHINGTON, D. C.

Serial No. U 359
Sheet 1 of 2 sheets

DWELLING UNIT SCHEDULE

Inspection No. 1 Address 461 Blank Street District No. 1 Block No. 16 Structure No. ____
Floor 1, 2 Part of Floor all Unit No ____ Vacant ☐ Pers/Room 1.27

D9 ROOM FACILITIES — TOTAL NUMBER OF ROOMS IN UNIT 15

	Kitchen	Liv. Room	Din. Room	Bedrooms 1	2	3	4	5	6	Other 7	8	9	Total
Rooms in unit (x)													ENTER ABOVE
Bed capacity (persons)													20
Lacking inst. heater (x)													8
Lacking window (x)													—
Lacking closet (x)													9
Dimensions (ft.)	—	—	—	—	—	—	—	—	—	—	—	—	—
(office entries)													AREA SUM STANDARD
Sleeping rooms (x)													1.73
Area: sleeping (ft.)													66
Area: nonsleeping (ft.)													490
Area: substandard (x)													ENTER ABOVE

11
1250

D13 SIZE OF HOUSEHOLD
Number of occupants total 19

FIGURE C21. TOTAL ENTRIES FOR ITEM D9: LARGE DWELLING UNIT

entry for total sleeping area in the margin space at the right (see Figure C21). Erase the original entry and replace it, *in red pencil,* with the new figure (square feet of sleeping area per person). In Figure C21 these two entries are represented by the numbers *1250* and *66*.

No special entries need be made in the total column for Area: nonsleeping. This total governs the scoring of deficiency item 29, for which adjustment is made at the template at the time of scoring.

CHECKING THE ENTRIES

The entries for item D9 or R9 should be checked on each Unit Schedule before it is put back into its Structure Schedule. Develop the habit of making each calculation twice and of rechecking an entry from a table immediately after you make that calculation or entry. This takes little time, but it should be done as an independent repeat of the operation so that you will not casually accept an error that you have just made. Checking in this fashion will demand more alertness from you than an independent recalculation later, but it will also save much time and handling of the material.

It is easy to forget to carry the totals for office entries of D9 and R9 into the column at the extreme right of this item. Check yourself on this point particularly in the first few days of your work in order to make it an automatic habit to enter these totals. It is these entries in the Total column which are used in scoring the schedules in the template, and any schedule which is blank in the Total column must be removed from the template and calculated at that time, when it would be very inefficient.

Note particularly that the total for the line Area: substandard does not go opposite that line but is carried up several spaces into the freestanding box just below the dotted line. Absence of this entry, like the others, will make it necessary to handle a schedule twice in scoring it.

PROGRESS RECORD; FILING

After completing the office entries for D9 and R9 for any block, check that block on the Progress Control Table on the line Room Facilities Calculated.

For each block processed as above, return the block folder to the processing file, behind the guide Room Facilities Calculated.

Family Income per Month: Item D13b

This calculation applies to all Dwelling Unit Schedules if item D13a has been enumerated for income; it does not apply to Rooming Unit Schedules.

MATERIALS; HANDLING

Schedules and a mounted copy of Processing Table 4 will be required. Handle schedules as with item D9: do not separate Dwelling Unit Schedules and Rooming

Unit Schedules from each other or from the Structure Schedules.

STANDARD ENTRIES

Refer to schedule item D13a. For each family member reporting a weekly income (showing a checkmark in column W) convert the income to a monthly figure, using Processing Table 4. Record these converted incomes on a scratch pad, total them; then total monthly incomes (those checked in column M); add the two totals and enter the sum in item D13b. Enter whole dollars only, using the table to convert parts of a dollar.

Note that weekly incomes are converted by Processing Table 4 to a monthly basis using a factor of four and one-third (not four) weeks per month.

If all incomes are monthly, total them directly from the schedule.

Do not overlook incomes entered for female members of a family.

If the field entries do not give a figure for the chief (or other important) earner, enter *NR* in D13b.

Note that this item covers only income of natural (related) families, but that income of a second or other nonprincipal family is to be included. If, however, income has been reported for lodgers or other unrelated persons, such income should be excluded from the calculation unless the survey director instructs to the contrary. For further definition of income, see Field Procedures, Appendix B-6.

CHECKING; PROGRESS RECORD; FILING

Calculations and entries for this item are to be checked at the time of entry, as described above under calculations for item D9.

When D13b has been completed for any block, check that block on the Progress Control Table on the line Income Calculated.

When schedules for a block or group of blocks have been processed and recorded on the control table, return block folders to the processing file, behind the guide Income Calculated.

Average Room Rent: Item R16

This calculation applies to all Rooming Unit Schedules.

MATERIALS; HANDLING; SPECIMEN

No processing table is required. Rooming Unit Schedules are handled without separating them from Dwelling Unit Schedules, and all schedules are kept in order by serial number. If rooming units are so few that it would be inefficient to go through the block folders again to locate these schedules, calculations for item R16 might be combined with those for item D13b or D9 and R9, above; or in the course of these earlier calculations dummy sheets might be inserted in block folders to mark the location of Rooming Unit Schedules.

Specimen entries are given in Figure C19.

ENTRIES

Entries are calculated from either or both of the two rent lines at the bottom of the field entries for item R9.[12] If, as is usually the case, room rents are all on one basis —weekly or monthly—the calculation is as follows: add the rents reported for all rooms; divide the total by the number of rooms reporting rent; the result is the average room rent per month or week, which is entered in R16.

Calculate average room rent to two decimal places as shown in Figure C19, thus: *$3.87*. Note in the example that 8 rooms, not 10, have rent reported.

If rents are mixed (monthly and weekly rents reported for different rooms in the same rooming unit), they must be converted to one basis or the other. Convert the type of rent which occurs in the smaller number of rooms to the other type. To convert weekly rents, use Figure C12, with factor of four and one-third weeks per month. For this purpose, the converted values may be entered on the face of the schedule, using the line of R9 below the original entry (if converting rent from weekly to monthly basis) or above it, before totalling and taking the average room rent.

Note that a large rooming unit may have several sheets of schedules; do not forget to total and average all rents on all sheets for the unit.

CHECKING; PROGRESS RECORD; FILING

Check these calculations and entries for each schedule before proceeding to the next one.

On the Progress Control Table enter a checkmark for each block on the line Average Room Rent Calculated when the operations above have been completed.

Return the schedules, in their block folder, to the processing file, behind the guide Average Room Rent Calculated.

Rent per Room per Month: Item D16a

This is not a standard calculation and is ordinarily omitted. If it is wanted, the operation consists of dividing the amount of rent for a dwelling unit (item D16) by the total number of rooms in the unit (top entry line of item D9). Weekly rents recorded in D16 are of course converted to a monthly basis either before or after the division, but before the entry in D16a.

Owner-occupied units receive a dash line entry for this item.

[12] Where a field entry has been made directly in R16, the enumerator's calculations for the entry should be checked at this stage. Check not only the accuracy of the rent figure entered in R16, but also whether the correct box (month or week) has been entered.

Appendix C-3-C

PROCESSING: SCORING

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General Instructions

THE OPERATIONS

Scoring of schedules is done on the Unit Appraisal Form by the following essential steps: a) the schedule is inserted in its scoring template; b) descriptive information on the schedule (address, etc.) is copied onto the top portion of an appraisal form; c) field entries for other items on the schedule are scanned through windows in the template and the scores for these entries, as read from the template, are entered in the Penalty Score column of the appraisal form, opposite the deficiency items; d) item scores are totalled; e) basic deficiencies are designated by checkmarks in the Basic Deficiencies column of the appraisal form, and the number of these basic deficiencies is totalled.

These operations, as further explained below, bring together the descriptive and the scoring information for each unit and the structure which contains the unit.

SPECIMEN ENTRIES

Figures C22 and C23 illustrate the scoring of the dwelling unit whose schedules are shown in Figures 5 and 6 of Chapter III. As you read the following detailed instructions, study the entries in Figures C22 and C23 to make sure that you understand the entry on the appraisal form for each item. These examples show the Punching Code Sheet, attached to the appraisal form, on which some entries are made in scoring. The code sheet is fully explained in Appendix C-3-D.

MATERIALS AND INFORMATION REQUIRED

The following are used: Structure and Unit Schedules (with all calculations completed); Structure and Unit Scoring Templates; sets of Unit Appraisal Forms and Unit Punch Cards; carbon paper cut to 4¼ x 11 inches; sharp black pencils, medium or hard.[13]

[13] If machine tabulation is to be used, the punch card will not be handled at this stage, and the appraisal form will be supplied alone, without carbon paper.

If the environmental survey is being made, the total environmental penalty score for each block frontage must be available from the environmental survey staff at the time of scoring the units for that block. Environment scores may be supplied on copies of the environmental Block Appraisal Form or as condensed transcripts from those forms.

It will be economical to prepare enough slips of carbon paper to have one for each unit in the largest block or group of blocks which will be scored at one time.

A shelf close behind the templates and slightly higher than the templates will usually be a convenience in handling schedules. An adding machine may be a help in totalling the scores on appraisal forms, but most scoring operators have preferred to do these additions directly on the form by mental calculation.

HANDLING OF SCHEDULES

The Structure Schedules for one block or group of blocks should be processed through the Structure Scoring Template as described below before scoring the Unit Schedules. In this first step do not remove the Unit Schedules from the Structure Schedules. Then process the Unit Schedules through the Unit Scoring Template. Rooming Unit and Dwelling Unit Schedules will not be separated for this second step. The same template is used for rooming units as for dwelling units.

Scoring the Structure Schedule

Slip the first Structure Schedule (containing the Unit Schedules filed within it) into the Structure Scoring Template. Make sure that the schedule is correctly aligned with the template windows, for accurate scoring depends on the placement of the schedule in such a way that the proper boxes appear in each window of the template.

Place a Unit Appraisal Form and Unit Punch Card (prepared with carbon paper between these two forms) on the rest at the right of the template.[14] Make sure that the carbon paper is correctly inserted.

STANDARD ENTRIES ON APPRAISAL FORM AND CODE SHEET

The operations specified below are illustrated in Figure C22.

Master check. Before making any entry on the appraisal form make a checkmark on the Punching Code Sheet on the entry line following Master Card. This is to identify one punch card for each structure as the master card, permitting analysis of certain factors by structures as well as by units.

Description. Copy the entries of the schedule heading in the spaces provided on the appraisal form, as shown in Figure C22. It is optional with your director whether the name and address of owner or agent need be copied onto the appraisal form. Disregard the assignment number, if any, and structure serial number (Serial No. S) in the heading of the schedule.

Note that appraisal area number cannot be filled in from the schedule; this number is determined later, during the analysis from punch cards.

Copy onto the appraisal form the schedule entries which appear in the topmost window at the left of the template. Note that if either of the boxes in this window is blank, the corresponding box on the appraisal form is left blank. Any dash line in an entry space is copied on the appraisal form.

If the structure is of four stories or more, show on the appraisal form whether it is an elevator or walk-up structure by copying *e* or *w* after number of stories.

Appraisal: standard deficiency items. The following items comprise the scoring entries for the structure.

ITEM 1.[15] Record the score for this item as determined by the schedule entry, which is viewed through the second window at the left of the template. If neither entry box visible through the template window shows an X entry, enter a dash line in the Penalty Score column of the appraisal form, opposite item 1. For an X in the left-hand box, enter the first (left) figure which appears beside the template window; for an X in the right box, enter the second (right) figure from the template.[16]

ITEMS 2 AND 3. Score in same manner as item 1.

ITEMS 2a AND 3a. If the supplementary appraisal is not used, the penalty for these two items will then be taken from the template opposite items 2 and 3. When the supplementary appraisal is used, the penalty points for the items on water and sewers (2 and 3) will then be the sum of the penalty that applies to the box checked under the item and the penalty due to a check in the "No" box of the supplementary appraisal (2a and 3a). The penalty for the check in the "No" box of the supplementary appraisal may have a value in the range of 10 to 25 points, depending on local decisions. For example, if item 2 is checked "private" and 2a is checked "No", then the penalty for item 2 will be 13 points (10 points for the supplementary appraisal, determined by local conditions).

ITEM 4. If no entry shows in the window, enter a dash line. If a figure appears, find the pair of values on the template (under Factor) which contains that figure. Under Points read the figure opposite this pair; enter this figure on the appraisal form as penalty score for item 4.

[14] Hereafter, where reference is made to the Unit Appraisal Form and Unit Punch Card to be handled as a pair, the initials AFPC may be used.

[15] Item numbers used from this point onward are those appearing on the templates, appraisal forms and punch cards. As explained in Chapter IV, Section 2, they have no consistent relation to numbers of the schedule items.

[16] In completing the appraisal form always align the figures in the Penalty Score column directly above the entry lines provided. In other words, a single digit figure is to be written directly above the right-hand entry line in this column; the first digit of a two-digit figure is to be written directly above the left-hand entry line. The purpose of this is to speed the addition of scores.

Assignment No.____

DWELLING SURVEY
WASHINGTON HOUSING ASSOCIATION, WASHINGTON, D. C.

Serial No. S 466

STRUCTURE SCHEDULE

Address 1253 Alpha Street District No. 2 Block No 17 Structure No. ____

Owner or Agent Omega Realty Company Not Available for Occupancy ☐

Units: Dwelling 3 (Total)
Rooming –
Business –

Stories . . . . 3 (Total)

Wood. . . . . ☒ (Wood)

Attached. . . . ☐ (Attached)

Toilets, Baths 2 (Toilets) – (Baths)

1 ACCESS 3, 6 — Rear Yard ☐ Alley ☐

2 WATER 3, 8 — Private ☐ None ☐

3 SEWER 3, 8 — Private ☐ None ☐

2a WATER 10 - 25 ☐

3a SEWER 10 - 25 ☐ (No)

4 DAYLIGHT OBSTRUCTION

Factor	Pts.
0 - .49	0
.50 - .74	2
.75 - 1.49	5
1.50 - 2.99	8
3.00 - 3.99	10
4.00 - 4.99	15
5.00 or more	20

Factor ____

5 STAIRS AND FIRE ESCAPES

☐ N.A.

See below

If X's in 2 boxes of top line:
2 story structure 10 pts.
3 " " 20 pts.
4+ " " 30 pts.

	No	No	No
3	☐	☐	☐
5	☐	☐	☒
3			☐
5			☒
10			☒
8			☐

30 Maximum

6 PUBLIC HALL LIGHTING

☐ N.A.

	Part	All
4, 8	☒	☐
5,10	☒	☐

24 SANITARY INDEX

Red	1, 2	☒	☐
Ga	2, 6	☐	☒
Ore	1, 2	☐	☐

22 DETERIORATION

	1	2
	☐	☒
	☒	☐
2, 4	☐	☐
1, 3	☐	☐
2, 5	☒	☐
1, 4	☐	☐

25 Max.

3, 8 or 3, 8
1, 3 or 1, 3
5, 8
3, 7

25 BASEMENT CONDITION

☒ N N.A.

R, 3	☐	☐
R, 4	☐	☐
R, 6	☐	☐

23 INFESTATION

R, 5	☐	☒
R, 1	☒	☐

4a SCREENING OF DAYLIGHT OBSTRUCTION — Yes ☐ Ext. ☐

REMARKS (refer to items by number)

	No	Yes
W Foundation Lacking	☐	☒

W: yes=8 pts. (enter below item 20)
no=—

Structure Scoring Template
Housing Appraisal Method of Committee on the Hygiene of Housing, APHA

HOUSING SURVEY DEMONSTRATION
City Washington State D. C. City Wash.
PUNCHING CODE SHEET
UNIT APPRAISAL FORM
☐ Rooming Unit Serial U____ Serial U

I. DESCRIPTION

STRUCTURE: Address 1253 Alpha Street Master Card ✓
District No. 2 Block No. 17 Appr. Area No.____ B8 L2
Owner or Agent Omega Realty Co Not Avail. for Occup. ☐ S4 L1
Number of Units: Dwelling 3 Rooming – Business –
Stories 3 Wood ☒ Attached ☐ Toilets 2 Baths – T2 3B
UNIT: Floor____ Part____ Unit No.____
Rooms____ Occupants____ With Lodgers ☐ Nonwhite ☐ U1 WL
Occupied by: Tenant ☐ Owner ☐ Bldg. Employee ☐ Vacant ☐ Rooming Unit____
Rent $____ per mo. ☐ per wk. ☐ Incl. Furn. ☐ Incl. Heat ☐ Rent 4__2__1__
Monthly Income $____ Rent: Rm/Mo $____ Insp. by ____ Insp. Date____ Inc. 4__2__1__

II. APPRAISAL

DEFICIENCY ITEM	Penalty Score Points	Basic Defic.		1 2 3 Punch H:
A. FACILITIES				
1. STRUCTURE: Main Access	–		1	3__
2. Water Supply (Source)	–	—	2	3__(or special)
3. Sewer Connection	–	—	3	3__(or special)
4. Daylight Obstruction	–		4	5__
5. Stairs and Fire Escapes	15		5	8__15__20__
6. Public Hall Lighting	9		6	5__
7. UNIT: Location in Structure			7	3__
8. Kitchen (or Special Rooming Unit) Facilities			8	8__
9. Toilet: Location____ Type____ Sharing____		—	9	8__10__30__
10. Bath: Location____ Type____ Sharing____		* —	10	3__8__20__
11. Water Supply (Location and Type)		—	11	8__10__15__
12. Washing Facilities			12	8__
13. Dual Egress		—	13	10__
14. Electric Lighting		—	14	15__
15. Central Heating			15	3__
16. Rooms Lacking Installed Heater		—	16	8__10__15__
17. Rooms Lacking Window		—	17	10__
18. Rooms Lacking Closet			18	8__
19. Rooms of Substandard Area			19	5__
20. Combined Room Facilities (items 16-19)			20	8__15__30__
w__8__x__y__z__	8			Score Incompl.____
a. Subtotal: Facilities				Fact 8__6__3__1__
B. MAINTENANCE				
21. Toilet Condition Index			21	7__
22. Deterioration Index: Struc. 23 Unit____		* —	22	8__15__30__
23. Infestation Index: Struc. 5 Unit____			23	5__
24. Sanitary Index: Struc. 7 Unit____			24	8__15__20__
25. Basement Condition Index			25	7__
w__x__y__z__				Maint 8__6__3__1__
b. Subtotal: Maintenance				
C. OCCUPANCY				
26. Room Crowding: Persons per Room		—	26	5__10__15__
27. Room Crowding: Persons per Sleeping Room		—	27	5__10__15__
28. Area Crowding: Sleeping Area per Person		—	28	8__10__15__
29. Area Crowding: Nonsleeping Area per Person			29	10__
30. Doubling of Basic Families			30	8__
w__x__y__z__				Local w__x__y__z__
c. Subtotal: Occupancy				Occup 8__4__2__1__
				Rep. def. (v)____
D. DWELLING TOTAL		—		DWLG 8__4__2__1__
E. ENVIRONMENT TOTAL w__x__y__z__v__	84	—		ENVIR 8__4__2__1__
F. HOUSING TOTAL		—		HSG 8__4__2__1__

Key to Sanitary Index (Item 24)
Yes: Red ✓ Ga__ Ore__ Reported: Pl__ Fo__ Wpl__ Wfd__ Hh__ Wh__
Extreme: Red__ Ga ✓ Ore__ Observed: Pl__ Fo__ Wpl__ Wfd__ Hh__ Wh__

S. D. 8__4__2__1__

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American Public Health Association

FIGURE C22. SCORING OF STRUCTURE SCHEDULE

ITEM 5. If an X appears in the Not Applicable box at the left of this item, enter a dash line on the appraisal form for item 5. If X's appear in two of the three top boxes at the right of the item, enter the penalty score appropriate for the height of this structure (top left window). This score is shown in the lower left portion of item 5 on the template. In this case, disregard any X's which appear in the eight boxes below the top line of boxes.[17]

If no X appears in the top line of boxes, or if only one X appears there, score only on the basis of the X's in the eight lower boxes, as follows: add the figures at the left of the windows for all boxes which show an X; enter the sum of these figures as the penalty score for item 5; note however that not over 30 points is to be entered, even though the sum of these figures may exceed 30 points.

If the letter F (for fireproof construction) appears in one or two of the boxes in the top line, do not give a penalty score on the basis of this entry, but base the score on X's appearing in the eight lower boxes.

ITEM 6. If X appears in the Not Applicable box, or if the four boxes in the scoring window are blank, enter a dash line for item 6. Otherwise, enter the sum of the scores for the one or two boxes checked.

ITEM 22. This item alone is scored through two windows of the template (in the center and right columns). For the first and second lines of boxes, select the score from the center or right window, whichever incurs the higher score. Add to the score for these two lines of boxes the scores for the two lower lines of boxes in the right window; then add the scores for the four lowest lines of boxes in the left window. Enter the total of these figures in item 22 of the appraisal form, using the Structure entry space at the left of the Penalty Score column —not the Penalty Score column itself.

Note that not over 25 points is to be entered for the structure deterioration score even though the sum of the scores taken from the face of the template may exceed this figure.

Recheck your entry for this item before scoring item 23, for it is easy to overlook a box or make a wrong addition in this double-window item.

ITEM 23. If either or both right-hand boxes are checked, add the scores and enter the sum in the Structure entry space for item 23. If neither right-hand box is checked but one or both left boxes are checked, enter the letter *R* in the Structure entry space. If all four boxes are blank enter a dash line in the Structure entry space.

ITEM 24. Add the scores for any boxes checked and enter the sum in the Structure entry space of item 24.

The director will instruct you whether the Key to Sanitary Index (at the foot of the appraisal form) is to be completed. If so, enter a checkmark on the first line of this key for each left-hand box containing an X; enter a checkmark on the second line of the key for each right-hand box with an X (see Figure C22).

ITEM 25. If the Not Applicable box is checked or if the six scoring boxes are blank, enter a dash line for item 25. If any of the right-hand boxes are checked, enter the sum of the scores indicated. If no right-hand box is checked but some left-hand box is checked enter a dash line for item 25 in the Penalty Score column, and enter the letter *R* at the left of this column (above the dotted line of item 25).

ITEM 4a. Disregard schedule entries for this item unless special instructions are issued.

Appraisal: local items w, x, y, z. If any local item in the w, x, y, z series occurs on the Structure Schedule, enter scores for these as indicated by special scoring values on the structure template below the Remarks window. Enter the score in the appropriate entry space on the line w, x, y, z below item 20, if the local item is one of Facilities; below item 25 if the item is one of Maintenance (see Figure C22). Enter a dash in the appropriate entry space if the schedule entry earns a zero penalty score for the item.

Add the scores on either or both of the w, x, y, z lines, and enter the sum in the Penalty Score column opposite the line.[18]

If a local item carries no penalty score but is to be checked for card punching as a descriptive item, enter a checkmark or dash line in the appropriate entry space, as shown by special directions on the template.

Appraisal: Environment Total Score. From the environmental Block Appraisal Form (or special transcript of environmental scores) for the block in which this structure occurs, read the total environment penalty score for the street frontage on which the structure lies; enter this figure in the Penalty Score column opposite Environment Total. Disregard the entry spaces w–x–y–z–v–to the left of the Penalty Score column unless you receive special instruction.

Checking the entries. Before removing the schedule from the template, verify all descriptive entries, all appraisal entries for deficiency items (except item 22, previously checked), and the entry for Environment Total Score.

See that Master Card checkmark appears on the Punching Code Sheet.

SPECIAL ENTRIES

For treatment of an item excluded from the survey, a vacant or otherwise generally unscorable structure, or an item not reported, see (below) Scoring the Dwelling Unit Schedule: Special Entries.

DUPLICATE APPRAISAL FORMS

For any structure containing more than one unit,

[17] Disregard a half-story entered in the story-count at the left of the template. Consider a 2½ story structure as 2 stories, and so on.

[18] This instruction applies if there is no local item to be scored later from the Unit Schedules. If local unit items are to be scored, defer the entry in the Penalty Score column.

make the entries specified above on as many duplicates of the appraisal form and punch card as are required to supply one AFPC for each Dwelling Unit or Rooming Unit Schedule. Do this by copying from the first appraisal form, not by rescoring from the schedule and template. Do not, however, copy the Master Card checkmark on any duplicate *code sheets* for a structure.

Ordinarily the total number of AFPC's required will be the total number of dwelling and rooming units combined, as read from the first two schedule entries in the top left window of the template; the number of AFPC's to be completed can be determined from these entries without counting the number of Unit Schedules inside the Structure Schedule.[19] For the structure shown in Figure C22 two AFPC's would be prepared in addition to the original.

In making the duplicate AFPC's, *always* copy from the original to the second, from the original to the third, original to fourth, etc.; *never* from the original to the second, second to third, third to fourth, etc. Under the latter practice an error introduced into a duplicate copy would be carried forward through any later copies.

Check each duplicate AFPC against the original before making the next copy. Place the completed AFPC's for the structure face down in the block folder, without removing the carbon paper from them. Remove the Structure Schedule from the template and put it face down on the AFPC's.

Repeat the operations described above for each Structure Schedule in the block folder.

PROGRESS RECORD; FILING

When Structure Schedules for a block have been scored, check that block on the Progress Control Table on the line Structures Scored. Return the block folder to the processing file behind the guide Structures Scored. AFPC's should be kept with their schedules in the block folder unless they are too bulky, in which case they may be put between the folders, in the same numerical order as the schedules.

Scoring the Dwelling Unit Schedule[20]

Remove the Unit Schedules from the first Structure Schedule in a block folder. Place the open Structure Schedule on the shelf behind the template or on the general work surface at your right hand, with the partially completed AFPC's for the structure face up. Make sure, if they have been separated in filing, that the AFPC's *are* those for this structure. Slip the Unit Schedules for the structure into the Unit Scoring Template.

[19] Exceptions will occur in certain types of sampling surveys, where the full number of units in the structure may not be enumerated; in such cases you may need to count the number of Unit Schedules within the structure folder.

[20] Although instructions are given separately for scoring dwelling and rooming units, the two types of schedules are not separated for this operation. Both types are scored in order as they occur in the structures.

Check the alignment of schedules with the template windows. Place the first (master) AFPC on the rest at the right side of the template and complete the entries as instructed below.

Note that if there is a scorable Rooming Unit Schedule in the structure, this should be scored on the first (master) AFPC, using the instructions in the next section of this appendix.

STANDARD ENTRIES

The operations described below are illustrated in Figure C23.

Unit serial number. Copy the unit serial number from the upper right-hand corner of the schedule into the entry space provided on the Unit Appraisal Form. Enter this number again in the space provided near the top of the Punching Code Sheet.

Description. Descriptive items are copied from the two main lines of the schedule heading and from the right-hand column of windows in the template, in the latter case by referring to those items which do not have leaders (dotted line) at the left side of the template window.

Boxes on the appraisal form are treated as follows: for a dwelling unit containing lodgers, make an X in the box With Lodgers; do not copy the *number* of lodgers shown on the schedule unless your director so instructs. The standard card punching does not provide for a distinction between one and more lodgers, and there is no purpose in entering the number of lodgers in this box unless it is expected that the number of lodgers will be analyzed by means of a hand-sort of the cards for units showing lodgers—or unless it is expected that case studies of units will be made from the appraisal form, in which the number of lodgers would definitely be wanted.

The Nonwhite box is checked (with an X) only if the corresponding X appears in the template window.

One of the four boxes following Occupied by: is always checked: either by copying the entry in the fourth right-hand window of the template or by reference to the entry Vacant in the heading of the schedule. If the Owner box has been checked no rent should show on the schedule, and the entry space for rent can be left blank on the appraisal form. Where rent is reported, enter both the amount and whether it is per month or per week, by checking the appropriate box. The boxes Includes Furnishings and Includes Heat are left blank unless the corresponding boxes have been checked on the schedule.

If a rent is not reported for a unit other than owner-occupied, put the letters *NR* in the entry space for Rent.

Note that all boxes in the descriptive items of the appraisal form *follow* the wording which identifies them.

Monthly income will be entered (whole dollars only) if enumerated. If income has been generally enumerated

in the study but is not reported for a particular unit, enter the letters *NR*. If income data have been omitted from the study leave this entry space blank.

Leave blank the entry space for Rent per Room per Month unless given special instruction.

The entry spaces Inspected by and Inspection Date may be left blank unless you are otherwise instructed by the director. It will be desirable to complete these entries if it is expected that the appraisal forms may be used to support court action or for any other purpose in which the identity of the inspector and date of inspection should be known. For general survey purposes, however, these entries are not needed; this information can always be obtained from records of block assignments or from schedules in the file.

Appraisal: standard deficiency items. Entries as specified below are added to those made in scoring the Structure Schedule.[21]

ITEM 7. Note, from the second main line of the schedule heading, the floor or floors on which the dwelling unit occurs.

If the unit occupies no floors other than the first, second and third, it receives a zero score. If it is wholly or partially in the basement, give the score shown on the template (standard value is 3 points).

If the unit occupies the fourth or fifth floor, refer to the number of stories in the structure description items at the head of the appraisal form to see whether the structure is a walkup building or contains an elevator. In the former case only, assign the penalty score shown for the highest floor occupied by the unit.

In the unlikely case of a sixth-story walkup unit, a penalty of 10 points would be justified. In the also unlikely case that a unit occupies both a basement and a fourth or fifth floor of a walkup structure, both penalties for these locations may be applied, and their sum entered on the appraisal form for item 7.

ITEM 8. Add the scores for any boxes checked, in the standard manner, using the penalty values immediately to the left of the template window.

ITEM 9: LOCATION. If any box on this line is checked, enter the corresponding penalty score in the Location entry space of item 9, to the left of the Penalty Score column. If no box is checked enter a dash line.

ITEM 9: TYPE. Score in the same fashion as Location above. In some cases the letter *C* may occur as the field entry for this subitem. This signifies a chemical toilet and carries a penalty of 10 points, unless other instructions are issued.

ITEM 9: SHARING. If no entry appears in the template window, enter a dash line in the Sharing entry space of item 9. If entries appear in the window, the standard penalty scores are as follows:

In a unit containing two rooms or more, 10 points penalty if shared by two units; 15 points penalty if shared by three or more units.

In a unit of one room only, 5 points penalty if shared by two units; 10 points penalty if shared by three or more units.

The number of rooms in the unit is most easily found in the top right-hand window of the template.

Note that the sharing scores for a dwelling unit toilet are shown (with a condensed version of the instructions above) on the template face as a part of item 9; the sharing scores shown near the lower right corner of the template apply to rooming units only.

Add the subtotal scores for Location, Type and Sharing; enter the sum as Penalty Score for item 9.

ITEM 10: LOCATION AND TYPE. Score in the same manner as Location and Type under item 9.

ITEM 10: SHARING. Score in the same manner as Sharing under item 9. The standard scoring values (also summarized on the template) are as follows:

In a unit of two rooms or more, 8 points penalty if shared by two or more units.

In a unit of one room only, 4 points penalty if shared by two or more units.

ITEM 11. Score in the standard manner, with a dash line or the penalty indicated for the box which is checked.

ITEM 12. Score in the standard manner, with a dash line if both boxes are blank or the sum of scores for boxes checked.

ITEM 13. If the box is checked, note in the schedule heading the floor or floors occupied by this dwelling unit. If the unit occupies no floor above the basement or first floor, score 10 points. If it occupies the second floor but no higher floor, score 20 points; if the third or higher floors, score 30 points.

ITEMS 14 AND 15. Score in the standard manner.

ITEMS 16-19: GENERAL. These four items are scored from tables which are supplied as an integral part of the unit template, but which cannot be reproduced legibly at the page size of this volume.[22] Supplied with this table is a movable blade, which carries on its edges the scoring values for these items. In scoring items 16-19 the following procedure is used. Set the scoring blade so that its right edge reveals the figure for the number of rooms which corresponds to the number of rooms in this unit (the figure which appears in the uppermost right window of the unit template). This setting of the blade is maintained in scoring all four items in this group. Each item is then scored by finding on the table the figure which appears for that item in the template window When that figure has been found in the table, the cor-

[21] For some of these items an occasional schedule may carry ½ as the field entry instead of the standard X. Scoring of this entry is explained below under the heading Special Entries: Item with Schedule Entry ½.

[22] Do not read (or attempt to understand) the instructions for scoring items 16-19 or 26-29 unless you have the actual template at hand. Though the written instructions may seem mysterious, the use of the template tables is simple and quickly mastered.

Note for Recall

DWELLING SURVEY
WASHINGTON HOUSING ASSOCIATION, WASHINGTON, D. C.

Serial No. U 753

DWELLING UNIT SCHEDULE

Address 1253 Alpha Street District No. 2 Block No. 17 Structure No. ____
Floor 3d Part of Floor All Unit No. ____ Vacant ☐

7 LOCATION
Unit in basement 3
Unit on 4th floor, walkup 4
Unit on 5th floor, walkup 8

8 KITCHEN FACILITIES

	RU	DU	No
	5	6	☐
(or Special Rooming Unit Facilities)	—	3	☐
	—	10	☐
	—	8	☐

9 TOILET
Location. . . . . 8, 15, 45 — Unit ☒ Struc. ☐ Avail. ☐
Type. . . . . 4, 12, 15 — Std. Privy ☐ Other Privy ☐ Flush Hopper ☐
Sharing: . . . . . (below) — Shared ☒ Total Units Sharing 2

Unit	Sh. by	Pts.	Sh. by	Pts.
2 Rms.+	2	10	3+	15
1 Rm.	2	5	3+	10

10 BATH
Location. . . . . 2, 8, 20 — Unit ☐ Struc. ☐ Avail. ☒
Type. . . . . 0, 3, 3 — Hot Shower ☐ Cold Tub ☐ Cold Shower ☐
Sharing: — Shared ☐ Total Units Sharing ___

Unit	Sh. by	Pts.
2 Rms.+	2+	8
1 Rm.	3+	4

11 WATER SUPPLY 8, 10, 15 — Cold ☒ Unit ☐ Struc. ☐

12 WASHING FACILITIES 5 ☒ No; 3 ☒

13 DUAL EGRESS
Unit in: Basmt, 1st fl. 10; 2d 20; 3d+ 30 — No ☐

14 ELECTRIC LIGHTING 7, 15 — Not Used ☐ None ☐

15 CENTRAL HEATING 2, 3 — Not Used ☐ None ☒

X: yes = X
no = —
(enter below item 30)

No Yes
X Inmigrant Family ☒ ☐

26. . . . . ROOMS 5

Room Facilities

16 ROOMS LACKING HEATER 4
17 " " WINDOW . . . . . —
18 " " CLOSET 3
19 " OF SUBST. AREA . . . . . —
20 COMBINED FACILITIES (Total 16-19 incl.)
27 Slpg. Rooms. 3
28 Slpg. Area. 290
29 Nonsl. Area. . . . . 345 (EMIS)

21 TOILET CONDITION

	1	2
4, 8	☒	☐
2, 5	☒	☐
5, 10	☐	☒
4, 8	☐	☐
2, 5	☐	☐

25 Max.

22 DETERIORATION

	No	
4	☐	
3	☒	
5	☐	

23 INFESTATION

	Std.	Inv.
R, 7	☐	☒
R, 2	☐	☐

24 SANITARY INDEX

		Std.	
Pl	R, 4	☐	
Po	R, 4	☐	☒
Wpl	R, 5	☐	
Wfd	R, 5	☐	
Hl	R, 5	☐	
Wh	R, 5	☐	☒

20 Max.

OCCUPANTS 7
Lodgers —
30 Basic Fmys. 1
2,8; 3,10
Nonwhite ☐ Nonwhit.
Occ. by — Tenant ☒ Owner ☐ Bldg. Empl. ☐
Rent: 30 — Mo. ☒ Wk. ☐
Includes — Furn. ☐ Heat ☐

Sharing in Rooming Unit:

Toilet	Pts.	Bath	Pts.
1-7 occ.	0	1-7 occ.	0
8-14 occ.	5	8-14 occ.	4
15-24 occ.	10	15 occ.+	8
25 occ.+	15		

Monthly Income $____
Rent/Room/Month $____
Insp. by R. L. S. Date 3/16/45

Unit Scoring Template
Housing Appraisal Method of Committee on the Hygiene of Housing, APHA

HOUSING SURVEY DEMONSTRATION
City Washington State D.C. City Wash.
UNIT APPRAISAL FORM
☐ Rooming Unit Serial U 753
PUNCHING CODE SHEET 753 Serial U

I. DESCRIPTION
STRUCTURE: Address 1253 Alpha Street Master Card ✓
District No. 2 Block No. 17 Appr. Area No. ____ R8 ____ L2 ____
Owner or Agent Omega Realty Co. Not Avail. for Occup. ☐ S4 ____ L1 ____
Number of Units: Dwelling 3 Rooming — Business —
Stories 3 Wood ☒ Attached ☐ Toilets 2 Baths — T2 ____ 38 ____
UNIT: Floor 3d Part All Unit No. ____
Rooms 5 Occupants 7 With Lodgers ☐ Nonwhite ☐ U1 ____ W1 ____
Occupied by: Tenant ☒ Owner ☐ Bldg. Employee ☐ Vacant ☐ Rooming Unit ____
Rent $ 30 per mo. ☒ per wk. ☐ Incl. Furn. ☐ Incl. Heat ☐ Rent 4__7__1__
Monthly Income $____ Rent. Rm/Mo $____ Insp. by R. L. S. Date 3/16/45 Inc. 4__7__1__

II. APPRAISAL

DEFICIENCY ITEM	Penalty Score Points	Basic Defic.	1 2 3 Punch N.	
A. FACILITIES				
1. STRUCTURE: Main Access	—		1	3__
2. Water Supply (Source)	—	—	2	3__(or special)
3. Sewer Connection	—	—	3	3__(or special)
4. Daylight Obstruction	—		4	5__
5. Stairs and Fire Escapes	15		5	8__15__29__
6. Public Hall Lighting	9		6	5__
7 UNIT: Location in Structure	—		7	3__
8. Kitchen (or Special Rooming Unit) Facilities	—		8	8__
9 Toilet: Location 8 Type — Sharing 10	18	✓	9	8__10__29__
10. Bath: Location 20 Type — Sharing —	20	*✓	10	3__8__20__
11 Water Supply (Location and Type)	8	—	11	8__10__15__
12. Washing Facilities	8		12	8__
13. Dual Egress.	—	—	13	10__
14 Electric Lighting	—	—	14	15__
15. Central Heating.	3		15	3__
16. Rooms Lacking Installed Heater.	10	✓	16	8__10__15__
17 Rooms Lacking Window.	—	—	17	10__
18. Rooms Lacking Closet.	5		18	8__
19 Rooms of Substandard Area.	—		19	5__
20. Combined Room Facilities (items 16-19) 15			20	8__15__29__
w 8 x ___ y ___ z ___	8			Score Incompl.__
e. Subtotal: Facilities	104			Facil 8__4__2__1__
B. MAINTENANCE				
21. Toilet Condition Index	3		21	7__
22. Deterioration Index: Struc 23 Unit 16	39	*✓	22	8__15__29__
23 Infestation Index: Struc 5 Unit 7	12		23	3__
24. Sanitary Index: Struc 7 Unit 9	16		24	8__15__20__
25. Basement Condition Index.	—		25	7__
w ___ x ___ y ___ z ___	—			
b. Subtotal: Maintenance.	70			Maint 8__4__2__1__
C. OCCUPANCY				
26. Room Crowding: Persons per Room	8	—	26	5__10__15__
27 Room Crowding: Persons per Sleeping Room	5	—	27	5__10__15__
28. Area Crowding: Sleeping Area per Person	8	—	28	8__10__15__
29 Area Crowding. Nonsleeping Area per Person	—		29	10__
30. Doubling of Basic Families.	—		30	8__
w ___ x ___ y ___ z ___	—			Local w__x__y__z__
c. Subtotal: Occupancy.	21			Occup 8__4__2__1__
				Rep. def. (-)__
D. DWELLING TOTAL	195	4		DWLG 8__4__2__1__
E. ENVIRONMENT TOTAL w__x__y__z__	84	—		ENVIR 8__4__2__1__
F. HOUSING TOTAL	279	—		HSG 8__4__2__1__

Key to Sanitary Index (Item 24)
Yes: Rd. ✓ Go__ Ore__ Reported Pl__ Po__ Wpl__ Wfd__ Hl__ Wh__
Exhaus: Rd.__ Go. ✓ Ore__ Observed: Pl__ Po. ✓ Wpl__ Wfd__ Hl__ Wh. ✓

B. D. 8__4__2__1__

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American Public Health Association

FIGURE C23. SCORING OF UNIT SCHEDULE

responding penalty score on the edge of the blade is read off and entered on the appraisal form as the score for that item.

If the value appearing through the template window for any of these four items is zero (dash line) the penalty score is zero, and a dash line may be entered in the penalty score column of the appraisal form for that item without referring to the table.

ITEM 16. Having set the scoring blade at the number of rooms in this unit, note the number of rooms lacking heater, which will be the topmost figure in the second window of the right-hand column of the template (in Figure C23 this numeral is 4). Find this figure in that column of template table 16 which is exposed just to the right of the scoring blade. Read the penalty score which appears at the right edge of the scoring blade on the same line as the figure which you have just found. Enter this penalty score on the appraisal form in the Penalty Score column for item 16. In the example given, the score is 10 points.

ITEM 17. Score in the same manner as above, using values of table 17. Note through the template window the number of rooms lacking window, and find this number on table 17 next to the scoring blade; read on the scoring blade the scoring value opposite this figure and enter this score as the penalty for item 17.

Note that a plus sign appears after the highest figure in each column of table 17. This plus sign signifies "or more," thus 1+ means one or more rooms; 2½+ means two and one-half or more rooms, etc.

ITEM 18. Score as above, using table 18.

ITEM 19. Score as above, using table 19.

ITEM 20. No entry for item 20 appears on the schedule or template. Score this item by adding the scores entered on the appraisal form for items 16 to 19, inclusive; enter the sum of these in the special entry space provided at the left of the Penalty Score column. This permits coding and punching this score without including it twice in the total penalty scores.

ITEM 21. For this item only, the scoring window is at the left of the item number; the penalty scores are at the right of the window. Scoring is done in the standard manner.

ITEM 22. Score in the standard fashion, totalling the values for all boxes checked and entering the sum in the Unit entry space of item 22, to the left of the penalty scoring column. Note, however, that a maximum of 25 points applies to the unit portion of this item score; no higher value should be entered even though the sum of values for the boxes checked should exceed this figure.

Add the Structure and Unit scores for this item and enter their sum in the Penalty Score column.

ITEM 23. Score this item in the same manner as item 23 on the structure template, entering the score (or the letter *R* for reported infestation only) in the Unit entry space.

Add the Structure and Unit scores for this item, and enter their sum in the Penalty Score column. Do not carry an *R* into the Penalty Score column. If *R* is the only entry for structure and unit, enter a dash line in the score column.

ITEM 24. Score in the same manner as item 23, entering the score or letter *R* in the Unit entry space. Note that a maximum score of 20 points applies to this item; do not enter a higher value, even though the total score for the boxes checked exceeds this maximum.

Add the Structure and Unit scores and enter their sum in the Penalty Score column. Exclude *R's* from this column, as explained in the previous item.

If you have been instructed to complete the key to this item (at foot of the appraisal form), do so as follows: for each checked box in the left (Reported) column, make a checkmark in the corresponding entry space in the upper line of the key; for each checked box in the right (Observed) column make a checkmark in the corresponding entry space of the lower line. For illustration of these entries, see Figure C23.

ITEMS 26-29: GENERAL. These items are scored in a manner similar to that explained in connection with items 16-19. The scoring blade, however, is set so that its right edge reveals the column showing the number of occupants corresponding to the number of occupants in the unit being scored (top figure in the fourth window of the right-hand column of the template). This setting of the blade is maintained in scoring all four items in this group.

ITEM 26. Read the number of rooms in the top right-hand window of the template. Find this number in table 26, in the column next to the right edge of the scoring blade, when the scoring blade is in the position specified in the previous paragraph. Read the corresponding value on the right edge of the blade; enter this value as the penalty score for item 26.

Note that a plus sign appears after the figure at the bottom of each column of table 26. This plus sign has the meaning "or more." Thus a dwelling unit with seven occupants incurs a penalty of zero points if it has seven rooms or more.

ITEM 27. Score in the same manner as item 26. The schedule entry to be read in scoring this item appears as the top figure in the third window of the right-hand column of the template. The item number 27 and leaders (dotted line) to this entry will identify it. In the example given this figure is 3.

ITEM 28. Read the second schedule entry in the third window of the right-hand column of the template (290 in the example). Maintaining the blade setting as above, find the pair of figures next to the blade which contains the figure appearing in the template window. Read the score on the right edge of the blade which is opposite this pair of figures; enter this score in the penalty score column for item 28.

Note that the lowest line of figures in table 28 applies only to rooming units (scored on the left edge of the blade). Dwelling units receive a zero score if their sleeping area falls within the range above this lowest line of figures.

ITEM 29. Read the last schedule entry in the third window of the right-hand column of the template (345 in the example). As in item 28, find the pair of figures in table 29 whose range includes the figure written on the schedule. Read the score opposite these figures on the right edge of the blade; enter this score as the penalty for item 29.

ITEM 30. This item is scored from the third entry line appearing in the fourth window of the right-hand column of the template (1 in the example). This item is identified by the number 30 on the template, followed by Basic Families and leaders to the entry space. If the figure entered on the schedule is 1, the score is 0 points (a dash line). If the figure is 2, the standard penalty is 8 points; if 3 or more, 10 points, as shown on the template.

Appraisal: local items w, x, y, z. If local items in the w, x, y, z series appear on the Dwelling Unit Schedule, score these as directed for the Structure Schedule, above. Refer to special penalty scores for these items which will be mounted on the unit template next to the Remarks window. Dwelling unit items in this series may apply to Facilities, Maintenance or Occupancy; the score for each item must be entered accordingly on the proper line (below item 20, below item 25, or below item 30). Total the scores on any of these lines in the Penalty Score column.

If the local item carries no penalty score but is to be checked for card-punching as a descriptive item, enter a checkmark or dash line in the appropriate entry space, as shown by special directions on the template.

Checking the item entries. Before totalling the item penalty scores, verify the unit descriptive entries and the penalty score entries by quickly rechecking the schedule in the template. Make sure that each item has an entry in the Penalty Score column (except item 20, which must have its special entry to the left of the score column). See that subscores for items 9, 10, 22, 23 and 24 have been correctly added into the Penalty Score column. Make sure also that scores for local items in the w, x, y, z series, if used, have been carried into the Penalty Score column.

Subtotal and total scores. Add the figures in the Penalty Score column for Facilities items 1-20 (and local items w, x, y, z if scored in this group); enter their sum on the line provided opposite Subtotal: Facilities. Repeat this operation for items 21-25 and local items in the Maintenance group. Repeat the operation for items 26-30 and local items in the Occupancy group. Add the three subtotal scores thus obtained, and enter their sum on the line opposite Dwelling Total.

If the environmental appraisal is being made, Environment Total will have been entered previously. In this case, add the dwelling and environment scores to produce the housing total score, and enter this value on the line opposite Housing Total. If environment scores are not being recorded in your study, no entry is needed in the Penalty Score column below Dwelling Total.

Basic deficiencies. The column at the extreme right of the appraisal form, headed Basic Deficiencies, is now to be completed, using a checkmark above the entry line for each item that meets the test of basic deficiency. No item which does not contain a printed entry line in the Basic Deficiencies column is to be checked as a basic deficiency, no matter how high its penalty score. For those items which have entry lines in this column, a checkmark is entered if the value recorded in the Penalty Score column is 10 points or over, except for items 10 and 22. These items are starred in the Basic Deficiencies column to remind you that they have a special qualifying score for basic deficiency. Item 10 is checked as a basic deficiency if the penalty score is 8 points or more; item 22 is checked as a basic deficiency if the penalty score is 15 points or more. These two values are easy to remember: in each case the score which qualifies as a basic deficiency is the second of the three numbers appearing for the item at the right of the long vertical rule in the Punching Code Sheet.

When all items have been examined and checkmarks entered in the Basic Deficiencies column, count the checkmarks in this column and enter the total number of these checkmarks on the entry line opposite Dwelling Total. Although two entry lines are provided below the line specified, no entry is to be made in either of them (see Figure C23).

Final operations. Check the accuracy of your additions in the Penalty Score and Basic Deficiencies columns.

Remove from the template the Unit Schedule which has just been scored; return it, face down, to the open Structure Schedule. Put the completed AFPC, face down, in a separate pile. The carbon paper should be removed from the AFPC at this time or when the pile of AFPC's is next handled, before coding.

Repetition for multiple units. If there are more units in the structure, score each unit on one of the AFPC's which were partially completed in scoring the Structure Schedule. For each unit repeat all operations specified above. When all units in a structure have been scored, return the schedules (in order by serial number) to the block folder, without the AFPC's. Instructions for refiling are given below, after Special Entries.

SPECIAL ENTRIES

Vacant unit. Enter on AFPC all descriptive information reported on the Unit Schedule (including rent if shown), but make no attempt to score the unit deficiency items. Enter a checkmark for Score Incomplete on the

Punching Code Sheet (just above Facilities score, below item 20). Structure deficiency items will ordinarily have been scored from the Structure Schedule except in the case of one-family dwellings. Cards for vacant units can thus be punched and analyzed for descriptive items, structure deficiency items, and Environment Total Score.

Other unit with score incomplete. If *Score Incomplete* appears in the heading of the schedule, make a check-mark in Score Incomplete entry space of the Punching Code Sheet. In such cases, unit deficiency items need not be completed on the appraisal form, but descriptive entries should be completed insofar as possible.

Single item not reported. Where the letters NR appear in a template window, enter *NR* in the Penalty Score column for the item affected. Do *not* check Score Incomplete on the code sheet (as instructed in the preceding paragraph) for one or two such unreported items. If more occur (and they should not) it may be justified to check Score Incomplete on the code sheet; consult the director concerning such cases.

Item excluded from survey. If any of the appraisal items 1-30 has been dropped from your study, enter two dash lines (in the form of an equals sign) in the Penalty Score column for that item.

Item with schedule entry ½. If the schedule entry for an item appearing in a template window is the fraction ½ (as may occur for items 11 and 13), this entry reduces the score shown on the face of the template to one-half its normal value. Ordinarily this reduced penalty score will be a whole number; if it should, however, contain the fraction ½ (as in reducing a score of 15 points to 7½ points) decrease the penalty score to the next lower whole number (in the case given, 7 points).

The instruction above does not apply to item 17. Here the schedule entry ½ signifies a skylight, and this value is provided for in table 17 on the template.

Unit with more than 12 rooms: items 16-19. These large units cannot be scored for items 16-19 in the regular manner, since the scoring tables on the template provide only for units up to 12 rooms. In such cases use the following procedure. Align the scoring blade to the left of the Basis of Score column beyond the scoring tables. Note the number which appears in the window of the template for any of the items 16-19; take this number as the numerator of a fraction in which the denominator is the number of rooms in the unit. For an illustration of this refer to Figure C21. In that instance the number of rooms lacking installed heater is 8, and the figure 8 would appear in the template window for item 16. Since this unit contains 15 rooms, the fraction referred to would be 8 over 15.

Find the line in the Basis of Score column which applies to the fraction thus arrived at (in the instance given, the third line applies: "½ but less than ¾"). From the blade read the penalty score which applies to this line of the column. Enter this score on the appraisal form for the item in question. In the instance given the penalty score for item 16 would be 8 points.

The same procedure applies to items 17, 18 and 19 in these large dwelling units.

Unit with more than 18 occupants: items 26-29. For such units a special procedure, similar to that described above, must be used for items 26-29.

ITEM 26. The number of persons per room will have been computed (during processing) and entered in red in the schedule heading, as shown in Figure C21. Refer to the values in the Basis of Score column which apply to item 26, and find the line which contains the number of persons per room for this unit. Read from the blade the penalty score which applies to this line. Enter this score on the appraisal form for item 26. In the instance given the penalty score would be 8 points.

ITEMS 27 AND 28. Special calculations will have been made and entered in red in the regular entry spaces for these items, appearing in the third window of the right-hand column of the template (see Figure C21). For each of these items, find in the Basis of Score column the line which contains the value entered in red on the schedule.[23] From the blade read the score which applies to that line; enter that score on the appraisal form for the item in question.

ITEM 29. This is not scored from calculations made in processing, but by a calculation while the schedule is under the template. This is necessary because the basis of this item is not a regular series of values like those in the previous items, but is based on a minimum space requirement for a unit with four occupants, with a small increment for each additional person. Therefore the schedule entries for Number of Occupants and Total Nonsleeping Area must be processed to bring them down within the range of the template table for item 29. This is done as follows:

a) Divide the number of occupants by 18.
b) Take the quotient (result of the division in step a), and divide the total nonsleeping area (as shown in the template window, item 29) by this figure.
c) Consider the new quotient to be the total nonsleeping area of a unit with 18 occupants, and score in the standard manner from the template table for item 29, using the column for 18 occupants.

The example given in Figure C21 would thus be scored as follows:

The schedule shows 19 occupants and 490 square feet of nonsleeping area:

[23] For item 27 the values shown in the Basis of Score column apply only to units with over 18 occupants; the "special" values noted at the foot of the column are the ones applying to units with 18 occupants or less.

Operation a) 19/18 = 1.06
Operation b) 490/1.06 = 462
Operation c) 18 occupants with 462 square feet of nonsleeping area get a penalty score of 0 points, since the value falls above the 350 square feet specified in the last column of template table 29.

PROGRESS RECORD; FILING

When all schedules in a block folder have been scored, check that block on the Progress Control Table on the line Units Scored.[24] Schedules in the folder are returned to the file behind the guide Completed Schedules for the district concerned. This guide signifies the premanent or inactive schedule file, which should be in separate drawers from the active schedule files for data collection and processing.[25] After filing schedules, check the block on the Progress Control Table, on the line Schedules Filed.

AFPC's should have their carbon paper removed by this stage, but appraisal forms are not separated from punch cards. They are placed in a separate file drawer or the special card filing case, behind the guide Units Scored. Until completion of coding and punching, temporary dividers should be used to designate AFPC's for the various blocks. These can be made of paper, 5½ x 11 inches, with district and block number shown close to the top (along the 11 inch edge), in pencil.

Scoring the Rooming Unit Schedule

The standard AFPC is used to score a rooming unit. The scoring operations are generally similar to those described in the preceding section. Where the practice differs for rooming units, the difference is specified below.

Since the Rooming Unit Schedule is printed on a colored paper stock, the appearance of a colored sheet in the unit template is your sign that the special instructions for scoring rooming units apply in that instance.

STANDARD ENTRIES

The instructions below are not illustrated by a separate specimen, but they can be followed by reference to Figure C23, with a copy of the Rooming Unit Schedule before you.

Rooming unit check; unit serial number. Before performing any other operation with a Rooming Unit Schedule, enter an X in the Rooming Unit box of the appraisal form (near the top left corner). Also enter a checkmark in the Rooming Unit entry space on the Punching Code Sheet (five lines below Master Card). Then copy the unit serial number from the schedule onto the appraisal form, and repeat this number on the code sheet as in the case of a dwelling unit.

Note that a rooming unit will always be treated as the master unit in a structure unless you have specific instructions to the contrary. At the time of making the entries specified above, check to be sure that you are using for the rooming unit that copy of the appraisal form which carries a checkmark in the Master Card entry space of the code sheet. If an error has been made in this matter, correct it at this point: make the Master Card checkmark on the rooming unit appraisal form, and erase that checkmark from any other appraisal form for that structure.

Description. In addition to the standard dwelling unit instructions for completing the descriptive entries, note the following points.

ROOMS. Enter here the total number of rooms in the unit. This is the number which is recorded as a field entry in the standard entry space of schedule item R9 (top right template window). If an adjusted number of sleeping rooms has been entered in red pencil above the field entry, disregard this adjusted entry.

WITH LODGERS. This box applies only to dwelling units (all occupants in a rooming unit are lodgers). Leave this box blank for all rooming units. This point is important because the punch card hole assigned to indicate an entry in this box may, in the case of rooming units, be reserved for a special purpose.

RENT. Enter here the amount of rent which appears in the fourth window of the right-hand column of the template, and show whether it is weekly or monthly. This figure will often be the rent per room per month. It is not, however, to be recorded in the entry space Rent per Room per Month on the last line of the descriptive items. That entry space is provided only for a specially calculated rent per room per month of dwelling units.

If Yes has been checked in the schedule box below the amount of rent (signifying that meals are included in the rent), enter an X in the box Includes Furnishings on the same line of the appraisal form with Rent.

This is a special use of this box of the appraisal form for a rooming unit, and the entry will be punched on the card for the unit to signify a boarding house. The Punching Guide for rooming units will prevent any confusion in interpreting the card punch for this item.

MONTHLY INCOME. This item will never be enumerated under the standard procedures for rooming units. Leave this entry space blank.

Appraisal: standard deficiency items. Those items or operations which differ from their counterparts on the Dwelling Unit Schedule are explained below.

ITEM 7. Score as for a dwelling unit.

ITEM 8. If local facilities items have been added to the Rooming Unit Schedule under schedule item R1a, b or c, special local scoring values will have been formulated for these and supplied on the face of the template,

[24] Note that this may require scoring Rooming Unit Schedules, as specified in the next section.

[25] At this stage the Structure Schedules should be filed hinge upward, for convenient handling and reference to structures by serial number in the upper right corner of the schedule.

in the column to the left of the regular penalty scores for kitchen facilities of dwelling units. In this case a special local value may also have been supplied as the penalty score for lack of cross ventilation (the only standard subitem under R1). If such a special column of rooming unit scores appears on your template, use it in scoring any rooming unit. If special local items have not been formulated, only the subitem on cross ventilation will be scored. In the absence of other instructions, use the standard value of 5 points for item 8 if an X appears in the topmost box in the template window for item 8. If no X appears in any box, enter the standard dash line as the penalty score of zero points for this item.

ITEM 9: LOCATION, TYPE. If either of these two subitems shows no entry in the template window, score it zero.

If any entry appears among the six boxes of these two subitems, it will be a figure rather than an X as with the Dwelling Unit Schedule. Treat such figures, however, as though they were X's; they have no significance for scoring except to show the location and type of the toilet facilities.

It is possible for either of these two subitems to show an entry in more than one box. If this occurs, use the penalty score applying to the entry in the box which is the furthest to the right on the schedule (this will give a score covering the poorest location or type of facility).

ITEM 9: SHARING. The Rooming Unit Schedule, unlike the Dwelling Unit Schedule, will always show a figure in the schedule entry space for this subitem.[26] A low figure, however, may mean a zero penalty score.

Score as follows: read the figure entered on the schedule in the Sharing entry space. Refer to the rooming unit sharing table (toilet column) near the bottom right of the template. In this table find the line which corresponds to the number of occupants sharing each toilet in this rooming unit. Read the penalty score on that line; enter this value as the penalty score for sharing. If the penalty score is zero points enter the standard dash line on the appraisal form.

The scores specified above are entered separately in the subitem entry spaces to the left of the Penalty Score column, in the regular fashion; do not forget to add these subitem scores to give the total score for item 9 in the Penalty Score column.

ITEM 10. Score in the same manner as instructed for item 9. For the sharing subitem, use the Bath column of the rooming unit sharing table.

ITEMS 11-15. Score these five items as for a dwelling unit.

ITEMS 16-19. Score these as for a dwelling unit with the following variations. Use the scoring values on the *left* side of the scoring blade. To do this, set the blade at the *right* of the column (in template tables 16-19) which corresponds to the number of rooms in the rooming unit. If the number of sleeping rooms in the unit is different from the total number of rooms, the net number of sleeping rooms will have been entered in red pencil on the schedule just above the original field entry for total number of rooms. In this case, set the scoring blade to the right of the column which corresponds to the *net* number of sleeping rooms, not the total number of rooms.

For a rooming unit with 12 net rooms or less, score from tables 16-19 as for a dwelling unit.

For larger rooming units, set the scoring blade at the *right* of the Basis of Score column of the template. For item 16, find in that column the line for table 16 which corresponds to the proportion of rooms lacking heater in the rooming unit which is being scored. From the *left* edge of the blade find the score which applies to the line you have found in the Basis of Score column; enter this score on the appraisal form. Score items 17, 18 and 19 in the same manner.[27]

ITEMS 20-24. Score as for a dwelling unit.

ITEM 26. Not applicable to rooming units; enter a dash line on the appraisal form.

ITEM 27. This item cannot be scored through the regular template window for item 27, because of a change in layout of the Rooming Unit Schedule (the office entry line Sleeping Rooms has been removed).

Read the number of occupants in the top entry space of the fourth window at the right of the template. If this number does not exceed 18, set the scoring blade to the *right* of the column (tables 26-29) which corresponds to the number of occupants. In the top window of the right-hand column of the template, find the number of rooms in the unit. If the red adjusted entry for net number of sleeping rooms has been made on the schedule, use this number rather than the gross number of rooms entered in the field. On table 27, find the number of rooms thus selected; read from the *left* edge of the scoring blade the penalty score corresponding to that number. Enter this score on the appraisal form.

If the number of occupants exceeds 18, a special entry in red will have been made on the schedule just below the number of occupants (see Figure C20, sheet 1), and this will appear in the template window. Align the scoring blade to the *right* of the Basis of Score column. In table 27 find the line which applies to the red schedule entry referred to. Opposite this line read the penalty score from the *left* edge of the blade; enter it in the appraisal form for item 27.[28]

ITEM 28. If the number of occupants does not exceed 18, this item is scored in the same manner as for a dwelling unit, but by setting the scoring blade at the *right*

[26] This figure is the number of occupants sharing each toilet.

[27] These directions are amplified in the dwelling unit instructions, under Special Entries. In referring to those instructions remember to use the scores on the left edge of the scoring blade.

[28] See footnote 27.

of the appropriate column of the template table and using the rooming unit scores at the *left* edge of the blade.

If the number of occupants exceeds 18, a special schedule entry in red, appearing in the regular window for item 28, is used for scoring (see Figure C20, sheet 1). This red entry is the sleeping area per person. Using the Basis of Score column, find the line for table 28 which applies to the figure entered in red on the schedule. Opposite this line, read from the *left* edge of the scoring blade the penalty score which applies to that line; enter this score on the appraisal form for item 28.[29]

ITEM 29. Not applicable to rooming units; enter a dash line on the appraisal form. Disregard any schedule entry which may (properly) appear in the template window for item 29.

ITEM 30. Not applicable to rooming units; enter a dash line.

Appraisal: local items w, x, y, z. Treat as for a dwelling unit.

[29] See footnote 27.

Checking the item entries. Check as for a dwelling unit. Note that in scoring items 16-19 and 27, 28, only the scores at the left edge of the scoring blade are to be used for rooming units. Check your scoring of Rooming Unit Schedules with particular care on this point, especially if Rooming Unit Schedules are few in your survey and you do not have occasion to become thoroughly familiar with them.

Subtotal and total scores. Add as for a dwelling unit.

Basic deficiencies. Determine, enter and total as for a dwelling unit.

Final operations. Finish as for a dwelling unit.

SPECIAL ENTRIES

See dwelling unit instructions for vacant unit, other unit with score incomplete, single item not reported, item excluded from survey, item with schedule entry ½.

PROGRESS RECORD; FILING

See dwelling unit instructions.

Appendix C-3-D

PROCESSING: CODING AND CARD-PUNCHING

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General Instructions

THE OPERATIONS

Coding is the preparation of a Punching Code Sheet. This translates the entries on the appraisal form into code symbols from which a statistical card for each unit is punched.

Materials required, handling of these, and completed specimens are given below, separately for these two operations.

ALTERNATIVE PROCEDURE FOR MACHINE TABULATION

The present appendix applies only to operations as performed for marginal punch cards. Where Hollerith machine tabulation is to be used, an appropriate code sheet will be developed locally by the consultant and director, and card-punching will follow the usual practice of the machine punch operator.

Coding for Card-Punching

MATERIALS AND INFORMATION REQUIRED

The scored AFPC's, with carbons removed, give the basis for the coding operation.

The Coding Guide (Figure C13)—either in standard form or with local revisions—should be mounted on stiff board for convenient reference. Check with the director whether the standard values are to be used for classes of rent and classes of income. Check also as to class intervals to be used for punching subtotal scores for facilities, maintenance and occupancy;[30] and as to class intervals to be used for dwelling, environment and housing total scores.[31] Special instructions will be issued if rent per room per month (table 6 of the Coding Guide) is to be coded in place of total rent.[32]

If local items in the w, x, y, z series are used, the Coding Guide should show the qualifying scores (or descriptive conditions) which call for punching these items. By qualifying score is meant the score at or above which the item will be coded for punching. For instance, if the qualifying level for an item is 8 points, a

[30] Ten points is the standard class interval.
[31] Twenty points is the standard class interval.
[32] If rooming units are included in the study, the Coding Guide will be amended by the consultant to show special classes of weekly and monthly average room rent for this type of unit, using class values of local significance.

penalty score of 7 points for that item would not be coded to punch, but a score of 8 points or any higher value would be so coded.

HANDLING OF AFPC'S

Since coding is a quick operation, it should not be done until a large enough number of blocks has been scored to permit efficient operation.

AFPC's for dwelling and rooming units need not be separated for coding. If they are coded together, care must be taken to distinguish the type of unit as each AFPC is handled, for reference to the proper rent table on the Coding Guide.

If forms for the two types of units are separated before coding, to minimize errors on this point, do not put the rooming unit or dwelling unit forms of one block with those of another block. Block separation of AFPC's must be maintained in all processing operations.

STANDARD ENTRIES ON PUNCHING CODE SHEET; SPECIMEN

Figure C24 illustrates the coding entries for the unit which was scored in Figures C22 and C23. Note in the example that checkmarks are made on the Punching Code Sheet only for those items in which a specified score or other condition occurs; many entry spaces may be left blank.

Entries from the scoring operations. The following entries on the Punching Code Sheet will have been made in scoring:

1) Serial unit numbers will appear on all Punching Code Sheets.

2) Master Card will have been checked on one code sheet for each structure.

3) Rooming Unit will have been checked for each code sheet where the Rooming Unit box of the appraisal form has been filled in.

4) Score Incomplete will have been checked for any vacant unit or other unit with a major group of items unscorable. Further coding for such units is specified below, under Special Entries.

If you find code sheets with errors in the foregoing entries, correct them before proceeding.

Descriptive items. Most of these do not require entries on the code sheet. Exceptions are treated as follows:

MASTER CARD; ROOMING UNIT. Entries are made in scoring; see above.

RENT. Note the rent figure entered on the appraisal form (on the same line with rent item of the code sheet) and note whether the rent is monthly or weekly. From the appropriate rent table of the Coding Guide find the class of rent which applies to this unit.[33] In the entry spaces of the rent line of the code sheet, enter checkmarks to show this class.[34] In the specimen of Figure C24, rent of class 6 is shown by checkmarks in entry spaces 4 and 2.

If no rent figure is shown on the appraisal form, make no entry on the code sheet for this item. This will apply to owner-occupied units or to other units with rent not reported.

INCOME. Refer to monthly income (table 3) on the Coding Guide, and enter checkmarks as indicated above for Rent.

R8/L2, S4/L1, T2/3B, U1/WL. Disregard these symbols and their entry spaces unless special instructions are given.

Deficiency items 1-30. The bold numbers 1-30 at the left of the long vertical rule on the Punching Code Sheet are the deficiency item numbers, repeated from the appraisal form. The smaller numbers to the right of this vertical rule are qualifying scores as defined above. Deficiency items having one hole on the punch card show one such qualifying score; items having two holes on the punch card show three qualifying scores.

ITEMS WITH ONE QUALIFYING SCORE. For each deficiency item of this type, enter a checkmark in the single entry space if the score for that item in the Penalty Score column of the appraisal form is as great or greater than the qualifying score printed on the code sheet. For example, in item 1, the qualifying score is 3 points. If the penalty score for item 1 as entered in the penalty score column of the appraisal form is either 3 points or 6 points, you will make a checkmark on the code sheet for item 1. In any other item which shows only one qualifying score, you will similarly enter a checkmark if the score on the appraisal form equals or exceeds that qualifying score. If it does not, make no entry on the code sheet for that item.

Refer to Figure C24 for illustrations.

ITEMS WITH THREE QUALIFYING SCORES. These operate as follows: if the penalty score on the appraisal form is as great as the first qualifying score printed on the code sheet, but is not as great as the second qualifying score, enter a checkmark above the entry line after the first qualifying score. For instance, referring to item 5, if the penalty score were 9 points, you would make a checkmark after the printed figure 8 on the code sheet.

If the penalty score is as great as the second qualifying score, but not as great as the third qualifying score, make the checkmark in the second entry space. Referring again to item 5, any score of 15 to 19 points, inclusive, would be checked in the second entry space on the code sheet. This has been done in item 5 of Figure C24.

If the penalty score equals or exceeds the third qualifying score on the code sheet, enter the checkmark in the third entry space.

Leave all three entry spaces blank if the score is less

[33] As previously explained, rent for rooming units will be coded from supplementary tables on the Coding Guide.

[34] The principles of class punching on the marginal punch card are explained in Chapter IV, Section 2, which you should read or have explained to you before coding.

HOUSING SURVEY DEMONSTRATION

City Washington State D.C.

UNIT APPRAISAL FORM

☐ Rooming Unit Serial U 753

City Wash.
PUNCHING CODE SHEET
753
Serial U

I. DESCRIPTION

STRUCTURE: Address 1253 Alpha St. Master Card ✓

District No. 2 Block No. 17 Appr. Area No. ____ R8 ___ L2

Owner or Agent Omega Realty Co. Not Avail. for Occup. ☐ S4 ___ L1

Number of Units: Dwelling 3 Rooming – Business –

Stories 3 Wood ☒ Attached ☐ Toilets 2 Baths – T2 ___ 3B

UNIT: Floor 3 & Part all Unit No. ____

Rooms 5 Occupants 7 With Lodgers ☐ Nonwhite ☐ U1 ___ WL

Occupied by: Tenant ☒ Owner ☐ Bldg. Employee ☐ Vacant ☐ Rooming Unit ____

Rent $ 30 per mo. ☒ per wk. ☐ Incl. Furn. ☐ Incl. Heat ☐ Rent 4 ✓ 2 ✓ 1 ___

Monthly Income $ ____ Rent: Rm/Mo $ ____ Insp. by R.L.S. Insp. Date 3/16/45 Inc. 4 ___ 2 ___ 1 ___

II. APPRAISAL

DEFICIENCY ITEM	Penalty Score Points	Basic Defic.		1 2 3 Punch If:
A. FACILITIES				
1. STRUCTURE: Main Access	– –		1	3 ___
2. Water Supply (Source)	– –	___	2	3 ___ (or special)
3. Sewer Connection	– –	___	3	3 ___ (or special)
4. Daylight Obstruction	– –		4	5 ___
5. Stairs and Fire Escapes	15		5	8 ___ 15 ✓ 20 ___
6. Public Hall Lighting	– 9		6	5 ✓
7. UNIT: Location in Structure	– –		7	3 ___
8. Kitchen (or Special Rooming Unit) Facilities	– –		8	8 ___
9. Toilet: Location 8 Type – Sharing 10	18	✓	9	8 ___ 10 ✓ 30 ___
10. Bath: Location 20 Type ____ Sharing ____	20	*✓	10	3 ___ 8 ___ 20 ✓
11. Water Supply (Location and Type)	– 8	___	11	8 ✓ 10 ___ 15 ___
12. Washing Facilities	– 8		12	8 ✓
13. Dual Egress	– –	___	13	10 ___
14. Electric Lighting	– –	___	14	15 ___
15. Central Heating	– 3		15	3 ✓
16. Rooms Lacking Installed Heater	10	✓	16	8 ___ 10 ✓ 15 ___
17. Rooms Lacking Window	– –	___	17	10 ___
18. Rooms Lacking Closet	– 5		18	8 ___
19. Rooms of Substandard Area	– –		19	5 ___
20. Combined Room Facilities (items 16-19) 15			20	8 ___ 15 ✓ 30 ___
w 8 x ____ y ____ z ____	– 8			Score Incompl. ____
a. Subtotal: Facilities	104			Facil 8 ✓ 4 ___ 2 ✓ 1 ✓
B. MAINTENANCE				
21. Toilet Condition Index	– 3		21	7 ___
22. Deterioration Index: Struc 23 Unit 16	39	*✓	22	8 ___ 15 ___ 30 ✓
23. Infestation Index: Struc 5 Unit 7	12		23	5 ✓
24. Sanitary Index: Struc 7 Unit 9	16		24	8 ___ 15 ✓ 20 ___
25. Basement Condition Index	– –		25	7 ___
w ____ x ____ y ____ z ____	– –			
b. Subtotal: Maintenance	70			Maint 8 ✓ 4 ___ 2 ___ 1 ___
C. OCCUPANCY				
26. Room Crowding: Persons per Room	– 8	___	26	5 ✓ 10 ___ 15 ___
27. Room Crowding: Persons per Sleeping Room	– 5	___	27	5 ✓ 10 ___ 15 ___
28. Area Crowding: Sleeping Area per Person	– 8	___	28	8 ✓ 10 ___ 15 ___
29. Area Crowding: Nonsleeping Area per Person	– –		29	10 ___
30. Doubling of Basic Families	– –		30	8 ___
w ____ x – y ____ z ____	– –			Local w ✓ x ___ y ___ z ___
c. Subtotal: Occupancy	21			Occup 8 ___ 4 ___ 2 ✓ 1 ✓
				Rep. def. (y) ____
D. DWELLING TOTAL	195	4		DWLG 8 ✓ 4 ___ 2 ✓ 1 ___
E. ENVIRONMENT TOTAL w ___ x ___ y ___ z ___ v ___	84	___		ENVIR 8 ___ 4 ✓ 2 ___ 1 ✓
F. HOUSING TOTAL	279	___		HSG 8 ✓ 4 ✓ 2 ✓ 1 ___

Key to Sanitary Index (Item 24)

Yes: Rcd ✓ Ga ___ Ora ___ Reported: Pl ___ Po ___ Wpl ___ Wfd ___ Hh ___ Wh ___

Extreme: Rcd ___ Ga ✓ Ora ___ Observed: Pl ___ Po ✓ Wpl ___ Wfd ___ Hh ___ Wh ✓

L. D. 8 ___ 4 ✓ 2 ___ 1 ___

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FIGURE C24. CODING FOR MARGINAL PUNCH CARD

than the first or lowest qualifying score printed on the code sheet. No example of this happens to occur with the specimen unit chosen for scoring, but it would occur, for instance, in item 5 if the score were any value between 0 and 7 points, inclusive.

Refer to various items in the specimen of Figure C24 to be sure you understand how this type of item operates.

Code the 30 appraisal items in numerical sequence before coding the other items explained below.

Subtotal scores. Note the Facilities subtotal score entered on the appraisal form. Find in the Coding Guide (table 4) the class which contains this score, and check this class on the code sheet in the line opposite the penalty score on the appraisal form. For class 0 make no checkmark. In the specimen the checkmarks signify class 11.

Code the Maintenance and Occupancy subtotal scores in the same fashion as the Facilities score.

Note that 10-point class intervals are to be used for subtotal scores unless special instructions are given. Note also that this is the first place on the code sheet where you have occasion to work with more than seven classes for an item. There are 15 classes which may be punched for these scores, and class 0, which is not punched. Be sure you are familiar with the punching combinations for all classes up to 15.

Local items w, x, y, z. If local items in this series are being used in your study, inspect the entry spaces for these items in all three places where they occur on the appraisal form (below item 20, below item 25, below item 30). Where any such local item is scored or shows a checkmark on the appraisal form, consult the Coding Guide (table 7) to see whether the entry meets the test for punching on the card. If so, check the appropriate entry space (w, x, y, z) in the line Local just below item 30 on the code sheet.

Reported deficiency. Disregard the code sheet line Rep. def. (v) unless special instructions are given.

This coding item and the corresponding hole on the punch card can be used to denote a reported but unverified (and hence unscored) deficiency, as in items 23 and 24. The punch card hole is generally more useful, however, if held in reserve for later special needs.

Total scores. Note the dwelling total score and find on the Coding Guide (table 5) the class of score which contains this figure. Indicate that class on the line Dwlg of the code sheet by checkmarks in the correct entry spaces. Make no checkmark for class 0.

Repeat the operation described above for Environment Total Score and for Housing Total Score.

Note that 20-point class intervals apply to dwelling, environment and housing total scores unless special instructions are issued.

Basic deficiencies. The bottom line of the code sheet applies to the number of basic deficiencies. Determine the number of basic deficiencies from the total entry in Basic Deficiencies column of the appraisal form, on the line opposite Dwelling Total. Indicate this number in the Basic Deficiencies entry space of the code sheet by checking the appropriate entry spaces. Note that the actual number of basic deficiencies is recorded, not a coded class number as in the case of subtotal and total scores. In other words, if there is one basic deficiency, the code sheet entry is a checkmark after 1. If there are nine basic deficiencies the code entry is checkmarks after 8 and 1. For no basic deficiencies make no checkmark.

Checking the entries. Before proceeding to code the next unit, check your entries on the code sheet against those on the appraisal form. Experiment to find which is the most efficient method of checking for you: whether as a single continuous checking run from top to bottom of the code sheet, or as a separate checking operation at the end of each part of the coding—checking the deficiency items when they have been coded, and checking separately the subtotal scores, total scores, etc.

SPECIAL ENTRIES

Unit with score incomplete. Make the standard code sheet entries for rent (and for income, if given). Code also the scores for structure deficiency items 1-6 inclusive, insofar as given on the appraisal form. Make no further entries on the code sheet unless special instructions are issued. The reasons for this procedure are explained later, under Card-Punching.

Single item not reported. For any item showing NR on the appraisal form, make no entry on the code sheet.

PROGRESS RECORD; FILING

On completion of coding for any block or group of blocks, check the Progress Control Table on the line Units Coded. Return the AFPC's, without separating them, to the punch card file, behind the guide Units Coded. Separate the blocks by paper dividers as explained under Scoring the Dwelling Unit Schedule.

Card-Punching

MATERIALS REQUIRED

The completed code sheets and appraisal forms (both still attached to the punch cards) give the basis for card-punching. The Punching Guide, Figure C14 (also Figure C15 if rooming units occur), should be prepared, with local revisions if necessary. The hand or power punch and correction pasters will be needed.[35]

If AFPC's have been supplied without an imprint showing the name of the city and title of the study, a rubber stamp will be needed to record this information. Appraisal forms and punch cards can best be rubber-stamped after they have been separated for card-punching.

[35] Even with the power punch a supplementary hand punch may also be needed; see Power Punch Procedure below.

HANDLING OF AFPC'S

If rooming units occur in your study, and if the Punching Guide shows a different treatment of these from that used for dwelling unit (as for number of rooms or number of occupants), it will usually be well to separate the rooming unit and dwelling unit AFPC's for each block before punching. This permits you to concentrate on the appropriate Punching Guide for each type of unit, minimizing errors.

Do not, however, put the rooming unit or dwelling unit AFPC's of one block with those of another block. Block groupings must be maintained until the first stage of analysis.

Do not separate a punch card from its appraisal form and code sheet until you are ready to punch it. Then remove the appraisal form carefully to avoid tearing or leaving excess adhesive on the punch card. Do not separate the code sheet from its appraisal form.

HAND PUNCH PROCEDURE; SPECIMEN CARD

Figure C25 shows the completed punch card for the dwelling unit which was coded in Figure C24. In reading the instructions below, study these two examples to be sure you understand why each position on the specimen punch card is treated in the manner shown. As previously stated, you will be given practice in all the operations described below.

In hand punching, two persons should work together, one calling off the punching from the appraisal form and code sheet, the other punching and calling back each punch as made. Not only is this the most convenient way of handling the code sheet, but it helps to protect the accuracy of punching.

Descriptive items: dwelling units. First punch the top long side of the punch card, reading from the top portion of the appraisal form and code sheet. The card is so arranged that items are punched in the sequence of reading them from these two forms. The punching for number of units and tenure will usually be done from a code (quickly learned) on the Punching Guide, and punching of rent and income is done from checkmarks on the code sheet. Location and other items on this side of the card can usually be punched from descriptive entries on the appraisal form, without reference to a code, once you know the position of the items on the card.

Descriptive items: rooming units. These are punched in the manner stated above, except that a special punch[36] is made to designate this type of unit, as called for by the code sheet. Special punching may be used for number of rooms, number of occupants or other items (see Figure C15).

Punching of the other three sides of the card is done entirely from the Punching Code Sheet, and the practice for rooming units and dwelling units is identical.

[36] Fourth field (eighth hole) from right end of card.

Deficiency items 1-30. Punch the items on the other long side of the card as indicated by the code sheet. Any item which shows no checkmark on the code sheet is left unpunched. If an item has one hole on the card and is checked, punch it. If a two-hole item is checked in position 1, punch position 1 only; if in position 2, punch hole 2 only; if in position 3, punch both holes 2 and 1.

Scores and miscellaneous. Punch (as indicated by the code sheet) the end showing score incomplete, subtotal scores for facilities, maintenance and occupancy, and items w, x, y, z. Finally, punch the end with the three total scores and number of basic deficiencies. Disregard hole v/Rd unless given special instructions by the director.

After punching, the cards and appraisal forms should be accumulated in separate piles, face down in order by serial number (or in order by serial number within the two types of unit, if these have been separated).

Special case: unit with score incomplete. When the code sheet shows a checkmark for Score Incomplete, the unit will be generally unscorable or not fully comparable with other units. In such cases, no attempt is made to produce a completely punched card for the unit. Some descriptive items and structure deficiencies can usually be punched, however, and this is done to permit limited analysis of punch cards for vacant or otherwise incompletely scored units. (Incomplete cards will of course be excluded from most tabulations.)

First punch Score Incomplete (next to Facilities Score at end of card). Then punch in regular fashion all descriptive items which have been completed on the appraisal form or code sheet. District and block location should always be punched, and the other descriptive items for structure usually can be. Descriptive items punchable for the unit will vary with the type of unit or structure, or with the reason for incompleteness of score.[37]

Punch the code sheet entries for structure deficiency items 1-6, but make no punch for other deficiency items, total scores, etc., unless specially instructed.[38]

Correction of mispunching; check of early cards. If an occasional error is made in punching, apply a gummed correction paster to bridge the mispunched hole, and repunch. Excessive use of correction pasters may impair the accuracy of reading from the percentage scale used with the cards during analysis, because the effective thickness of the cards is changed at certain points. Try to avoid errors, by punching with special care until you

[37] Note that the card for an incompletely scored unit should not be the master card for a structure unless there is no other completely scored unit in the structure, or unless the incompletely scored unit is a rooming unit, which ordinarily takes precedence, for the master punch, over a completely scored dwelling unit.

[38] Note that a score for item 25, and structure components of the scores for items 22-24 (which may properly have been copied onto all appraisal forms of a structure in scoring) should not have been coded, and if coded should not be punched.

UNIT PUNCH CARD

☐ Rooming Unit Serial U 753

I. DESCRIPTION

STRUCTURE: Address 1253 Alpha St.

District No. 2 Block No. 17 Appr. Area No. ____

Owner or Agent Omega Realty Co. Not Avail. for Occup. ☐

Number of Units: Dwelling 3 Rooming – Business –

Stories 3 Wood ☒ Attached ☐ Toilets 2 Baths –

UNIT: Floor 3d Part All Unit No. ____

Rooms 5 Occupants 7 With Lodgers ☐ Nonwhite ☐

Occupied by: Tenant ☒ Owner ☐ Bldg. Employee ☐ Vacant ☐

Rent $ 30 per mo. ☒ per wk. ☐ Incl. Furn. ☐ Incl. Heat ☐

Monthly Income $ ____ Rent: Rm/Mo $ ____ Insp. by B.L.S. Insp. Date 3/16/45

City Washington, D. C.

HOUSING SURVEY DEMONSTRATION

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II. APPRAISAL

DEFICIENCY ITEM	Penalty Score Points	Basic Defic.
A. FACILITIES		
* 1. STRUCTURE: Main Access	– –	
2. Water Supply (Source)	– –	—
3. Sewer Connection	– –	—
4. Daylight Obstruction	– –	
5. Stairs and Fire Escapes	1 5	
6. Public Hall Lighting	– 9	
7. UNIT: Location in Structure	– –	
8. Kitchen (or Special Rooming Unit) Facilities	– –	
9. Toilet: Location 8 Type – Sharing 10	1 8	✓
10. Bath: Location 20 Type – Sharing –	2 0	*✓
11. Water Supply (Location and Type)	– 8	—
12. Washing Facilities	– 9	
13. Dual Egress	– –	—
14. Electric Lighting	– –	—
15. Central Heating	– 3	
16. Rooms Lacking Installed Heater	1 0	✓
17. Rooms Lacking Window	– –	—
18. Rooms Lacking Closet	– 5	
19. Rooms of Substandard Area	– –	
20. Combined Room Facilities (items 16-19) 15		
w 8 x ____ y ____ z ____	– 8	
a. Subtotal: Facilities	104	
B. MAINTENANCE		
21. Toilet Condition Index	– 3	
22. Deterioration Index: Struc. 23 Unit 16	3 9	*✓
23. Infestation Index: Struc. 5 Unit 7	1 2	
24. Sanitary Index: Struc. 7 Unit 9	1 6	
25. Basement Condition Index	– –	
w ____ x ____ y ____ z ____	– –	
b. Subtotal: Maintenance	70	
C. OCCUPANCY		
26. Room Crowding: Persons per Room	– 8	—
27. Room Crowding: Persons per Sleeping Room	– 5	—
28. Area Crowding: Sleeping Area per Person	– 8	—
29. Area Crowding: Nonsleeping Area per Person	– –	
30. Doubling of Basic Families	– –	
w ____ x – y ____ z ____	– –	
c. Subtotal: Occupancy	21	
D. DWELLING TOTAL	195	4
E. ENVIRONMENT TOTAL w ____ x ____ y ____ z ____ v ____	84	—
F. HOUSING TOTAL	279	—

Key to Sanitary Index (Item 24)

Yes: Rcd ✓ Ga ____ Ora ____ Reported: Pl ____ Pa ____ Wpl ____ Wfd ____ Hk ____ Wh ____

Extreme: Rcd ____ Ga ✓ Ora ____ Observed: Pl ____ Pa ✓ Wpl ____ Wfd ____ Hk ____ Wh ✓

FIGURE C25. COMPLETED MARGINAL PUNCH CARD

have learned the procedures and codes and have gained full confidence; speed with accuracy will then develop naturally.

Check your early cards immediately after punching, to be sure there is no misinterpretation of the punching codes or other consistent error which would affect a group of cards.[39] With this precaution, a full systematic check on the accuracy of your work—usually specified before completing the progress record—is not necessary or desirable at this stage. In the case of card-punching, this thorough check is made by separate later operations at times when it can be done most efficiently. Part of these operations are specified below, under the heading Punch-checking, and the remainder in Appendix C-4.

Progress record; filing. After the operations specified above, record each block on the Progress Control Table, on the line Cards Punched.

Appraisal forms and punch cards for each block may be combined (forms together and cards together) and returned to the punch card file, with paper block dividers, behind the guide Cards Punched. It will usually save time, however, to defer refiling until after the quick operation of partial punch-checking, described below.

POWER PUNCH PROCEDURE

One person can work efficiently with the power (keyboard) punch. Otherwise the procedure is similar to that given for the hand punch. The instructions given above are to be used, with the following modifications.

The four sides of the card are punched in the same sequence as specified for the hand punch, the punch operator reading the punching values from the appraisal form and code sheet. It may be most efficient to punch the first side of the card for all units in a block or other grouping in a single run, before proceeding with the second and later sides.

Insert the card in the punch, first side (descriptive items) downward, with printing toward you, and see that the card is firmly aligned against the stop at the left of the machine. Set the keys for that side of the card by reading the appraisal form and code sheet, check the setting of keys, and trip the motor. Repeat for the other three sides of the card, referring to the code sheet only.[40]

Each long side of the card contains 41 holes, but the largest power punch available at the time of writing this manual carries only 40 keys. Until or unless 41-key punches can be provided, a special operation is therefore necessary for any card requiring the master punch or a punch for deficiency item 1. To punch either of these positions, use the following procedure: insert the card in the punch, printing *away* from you, slide the card to the stop at the *right* of the machine, depress the key farthest to the left, and trip the motor. If the alignment of the right hand stop on the particular punch does not give a punch well centered on the hole for either of these positions, it may be necessary to use a hand punch. In either case, the special punch is probably best made as the first operation for that side of the card, to avoid forgetting it.

PUNCH-CHECKING (PARTIAL)

As previously indicated, the full check for accuracy of punching can be made most efficiently after the punching operation itself. In fact, for the great majority of items this check is deferred until the phase of analysis and interpretation. At that time, all cards with identical punching for any item are automatically brought together by the sort before tabulation. This permits rapid inspection of the sorted cards to make sure that each punch agrees with the written entry on the punch card.[41] Punch-checking is not deferred, however, for the following items:

Master punch. This is checked at this stage because there is no written evidence of master card status on the face of the punch card, as needed in the standard punch-checking procedure. This check is therefore made by reference to Master Card checkmarks on the code sheets. Make sure that one master card (and only one) has been punched for each structure. Usually this will mean one master card for each street address.

Score incomplete. This is also checked by reference to the code sheets.

Location punching: district and block numbers. This punching is checked at this stage because all cards for a given block are together and this is the easiest time to check the punching. First, inspect the edge of the group of cards to see that no card lacks punching for the district and block numbers or has incorrect punching. Either mistake will show up as a violation of the normal punching pattern. Then check by fanning all cards in the regular manner, to make sure that no card which has correct punching for the district and block shows written entries for another district or block, as the result of misfiling somewhere along the line.

Rooming unit punch. This is checked at this stage if rooming unit and dwelling unit cards have been separated as suggested earlier. If not, it can be punch-

[39] If you find such an error among your early cases (as for instance punching block numbers in the wrong field) it may be necessary to recopy and repunch the entire group of cards to avoid inaccurate scaling later.

[40] Since the card is punched upside down, items which read from left to right on the edge of the card appear in reverse order on the keyboard. You may therefore wish to read the appraisal form and code sheet entries for each side of the card from bottom to top, in order to permit key-setting in the normal fashion from left to right across the keyboard.

[41] For most items, punch-checking is done by a rapid method of fanning the sorted cards, which will be demonstrated by the consultant. Instructions for this operation are also given in Appendix C-4, as a reminder of what the consultant will have demonstrated.

checked during tabulation. In either case, make sure not only that each rooming unit card has the appropriate punch, but also that no dwelling unit card has it.

The fact that all other punch-checking is deferred until analysis, and that careless habits of punching may not show up until that time, is a particular reason for coaching yourself in accurate punching practice from the outset.

Progress record. On completion of the operations above, check the block on the Progress Control Table, on the line Cards Partially Punch-checked.

FINAL OPERATIONS

The following steps complete the processing phase, leaving the punch cards in form for the first step of analysis.

Filing the appraisal forms and code sheets. These two forms may now be separated. Appraisal forms may be permanently filed alone, in order by serial number, or stapled to the upper left corners of their Unit Schedules and returned to the block folders. The former practice is recommended. It gives quick access to the descriptive and scoring data of units at any address (by reference to serial numbers given on the Dwelling Serial List) without removing the bulky block folders from the file.[42]

Appraisal forms filed alone can be kept in a standard letter file or (with better economy of space) in one of the special cases used for punch card filing. Dividers for the major districts may be desirable.

Punching Code Sheets have no permanent value, but they should be kept in any convenient manner until punch-checking is completed during analysis, when they can be destroyed.

Filing the punch cards. File the punch cards in the file drawer or special case previously used, behind the guide Cards Partially Punch-checked: Ready for Analysis. Or the cards may be transferred to a separate drawer or case similarly labelled.

In either event, continue to use the paper dividers for cards of different blocks. These will be replaced by permanent dividers for appraisal areas or districts after the test for quality difference, the first step in analysis.

Completing the progress record. When the three types of forms have been filed, record this fact on the last three lines of the Progress Control Table.

[42] Punch cards are of course a second source of the appraisal form information for any unit, but a particular unit is not readily found among the punch cards once tabulation of these has begun.

Appendix C-4

TABULATION AND ANALYSIS

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A. Introduction

PURPOSE OF INSTRUCTIONS

As explained in Chapter V, tabulation and analysis are a stage of the work in which the director must participate more closely than in other stages, in order that he may interpret the early results and shape the full plan of tabulation. While a general plan of tabulation appropriate to the local study will be laid down during the consulting period, its final details cannot be settled until at least part of the findings are tabulated and can be interpreted by the director.

This appendix covers, for the director and members of the office staff, both the standard procedures and those to be used in special situations which may arise at various stages of analysis. It therefore deals with points which may not be clear until you have actually handled punch cards and constructed tables. Since understanding of these points will be gained by practice in construction of tables during the consulting period, it is not necessary to master the details of this appendix until that time.

It is assumed that the director has read Chapter V, and that other members of the office staff will also have read it or had its essential points explained before attempting to use the following instructions. Reference will therefore be made to terms used in that chapter without definition here.

MATERIALS REQUIRED

The essential materials of tabulation are the completed punch cards, the counting sorter for Hollerith machine cards or the Percentor (scaling device) for marginal punch cards, and a supply of standard Tabular Forms for construction of tables and charts. Mounted copies of the Scheme of Table Identification, Figure 13, will be needed for constant reference. The adding or calculating machine will be wanted. If marginal punch cards are used, a scheme of major and minor file dividers for these will be formulated by the consultant.

One or more ringbooks for filing tables and charts should be prepared with divider sheets and index tabs. Each book should have a contents page, on which proposed tables or charts can be listed and checked off as completed.

As previously noted, the Progress Control Table is not essential, since each completed operation supplies its own record in the form of tables, charts or maps.

THE OPERATIONS

Work tables and charts for any district are normally made in the six steps listed below. A completed work table is illustrated in Chapter V, Figure 17. The layout of other work tables is shown in Figures C27-C35 of this appendix. Typical charts are given in Chapter V, Figures 23-28.

Step 1. The primary test of quality difference (Chart 0) is made for all blocks or sampling areas (rank D), to determine whether primary Tables 1-9 can be made for the district as a whole (rank B) or should treat subordinate appraisal areas within the district (rank C). Decision on this point should be made jointly by the dwelling and environmental survey directors.

Step 2. Primary Tables 1-9 (listed in Figure 13) are made of rank B or C as indicated by Step 1.[43] Rank C tables are totalled to give rank B tables for the districts. Rank B tables are finally totalled to rank A, giving results for the entire study.[44]

Step 3. Charts 2-9 are made for interpretation of the primary tables.[45]

Step 4. Secondary tests of quality difference (Charts 10 and 20) are made for those descriptive groupings of dwellings and families which are shown by Charts 2 and 3 to be important in the district. Secondary tests of quality difference can usually be made for all units or households in the district (rank B).

Step 5. Secondary tables are made for those groupings of dwellings and families which are shown in Step 4 to carry significant quality differences.

Step 6 Charts are made to interpret the secondary findings of Step 5.

This procedure can be varied by deferring Steps 4-6 until primary tables and charts (Steps 1-3) have been completed for all districts. Secondary tables and charts can then be made for the entire study (rank A) with some loss in sharpness of results but appreciable saving in tabulation time.

EFFECT OF MACHINE TABULATION

Whichever type of punch card is used, the tables and charts to be produced will remain the same, though the methods of producing these will differ. Use of the Tabular Form with Hollerith machine punch cards has been discussed in Chapter V, Section 3, and is further explained in Section B, below. The use of machine tabulation will make it possible to disregard Section C of this appendix and the items in Section G which pertain to the marginal punch card.

B. Use of the Standard Tabular Form

GENERAL INSTRUCTIONS

Mandatory use. The standard Tabular Form, illustrated in Chapter V and in figures of this appendix, provides a standard base on which all analytic data ex-

[43] Tables on Subjects 7 and 9 (environment subtotal scores and types of environmental deficiencies) are prepared by the environmental survey staff from Block Appraisal Forms; tables for all other subjects are made from dwelling punch cards.

[44] Methods for totalling to a higher rank are given in Section G of this appendix.

[45] Specimens of the charts made from work tables are given in Chapter V.

(SHORT TITLE: Subtitle:) SHEET (Sheet No.) (Table or Chart No.)

(Table specifications or headnotes) STUDY (TITLE OF STUDY)

(MAKERS' INITIALS)

Readings ↓ Entries ↓ Date (Date)

(Column-group side-heading)	(Column-group headings) (Column-group subheadings)																	
(Column side-heading)	(Column headings) (Column subheadings)																	
(STUB HEADING)	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
(STUB ITEM)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
(line item, or class item)	45.1 (line-and-column entry)																	
(line item)	56.2 (line-and-column entry)																	
(line item)	100.0 (check-total: also a line-and-column entry)																	
	–	–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			range-graph															
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	–	–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(Footnote)

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FIGURE C26. TERMINOLOGY OF THE TABULAR FORM

cept maps can be compiled.[46] It provides a permanent record of all readings from punch cards, and if unforeseen combinations of data are wanted in the later stages of analysis these can usually be taken directly from the standard work tables. Proper table identification, checking and other controls are assured if the Tabular Form is correctly used. For these and other incidental reasons, the Tabular Form is to be used for all work tables unless the consultant expressly agrees to a departure from this practice.

Terminology. Figure C26 shows the terms used for all types of entries on the Tabular Form. Each type of entry is identified by its name in parentheses. These terms will be used in all later reference to entries on the Tabular Form.

The four main parts of the form can also be identified in Figure C26, as follows:

1) *Head:* all material above the double rule at the left of the sheet, and all material to the right down as far as the row of letters *d, c, m* and the single horizontal rule below those letters;
2) *Stub:* the material bordered by the heavy double horizontal and vertical rules;
3) *Body:* the remainder of the sheet above the heavy cross rule which forms the lower border of the stub;
4) *Foot:* the two lines at the bottom of the sheet.

Note that certain terms are shown in full capitals in Figure C26; others in lower case. The same practice should be followed in typing the corresponding entries for any table or chart.

Note also that the word "table" or "chart" does not appear in the head of the blank form, but is to be typed in as each table or chart is prepared on the typewriter.

Column-group side-headings are used in primary tables to indicate whether the column-group headings

[46] The data on the Tabular Form provide, of course, the information from which maps also are prepared.

signify districts, appraisal areas or blocks, and in secondary tables for similar purposes. Column side-headings serve the same purpose for column headings when these are used.

Examples of the entries identified in Figure C26 will be found in Figures 17 and 22 of Chapter V.

ORGANIZATION OF TABLES

Use of the head. The table title in the heading is used to tell exactly what the table contains: first, on the top line, in the form of a short and readily understood title, commonly with a subtitle. The remaining title lines are used for an exact specification of the areas, types of units, or other classifications of data presented by the table. Examples of proper titles and other heading entries are shown in later figures of this appendix.

Use of the stub and columns. The stub of a table always expresses the subject of tabulation, that is, the factor by which dwelling or rooming units (or blocks in the environmental survey) are being distributed. Thus in Tables 5, 15 and 25 the stub will show the number of basic deficiencies (Subject 5 of Figure 13).

Headings of column-groups always carry breakdowns corresponding to the series of tabulation. In a primary table of rank B, each column-group will represent a district. In secondary tabulations by types of housing (series 1 of Figure 13), a column-group will represent such a classification—as a type of structure or a class of rent. In secondary tabulations by breakdowns of occupants (series 2) column-groups will correspond to characteristics of the household, such as classes of income or racial breakdowns. The punch cards corresponding to the column-group are tabulated in that column-group according to their distribution into classes shown in the stub.

Use of last column-group for totals. The last column-group at the right of a table should ordinarily be reserved for totalling the values in the other column-groups. In this way a table for five districts (rank B) can carry the rank A values also (if the study consists of only these five districts), and the table is then identified as of rank BA. A table of ten districts can carry five on the first sheet and five on the second, with totals for all ten at the right of the first sheet. Putting totals at the right of the sheet instead of at the left, as is customary, makes it possible to compare the total values for several similar tables by overlapping the sheets so as to expose only the right hand column-group of each sheet. The stub entries on the top sheet will serve for all sheets.

Numbering the sheets of a table. In some tabulations, all stub items for the subject in question can be expressed on the 16 lines provided in the stub of the form. An example of this type is Table 5, number of basic deficiencies. In such a case the table is a one-sheet table. Five districts, appraisal areas, or other classifications can be tabulated on the same sheet, with the sixth column-group reserved for totals for the five classifications. In a survey covering ten districts, for example, Table 5 of rank BA would be made by devoting one sheet to the first five districts and the survey totals, and a second sheet with the same stub items would be devoted to the last five districts.[47] The first sheet would be identified as Sheet 1 of 1: Districts 1-5. The second sheet would be identified as Sheet 1 of 1: Districts 6-10.

Note that in the above case two sheets are required to tabulate all the districts, but that only one sheet is needed to tabulate all the data for any one district. This is the basis of determining sheet numbers: the number of sheets in a table is the same as the number of sheets required to carry the stub items for any one area or other classification in a column-group.

Some tables require two or more sheets to carry the stub items. Table 8, for example, normally requires about ten sheets of the Tabular Form to list all of the stub items and their subordinate line or class items. For such cases, consider first a survey with only five districts, in which all districts can be tabulated across one sheet of the form. The sheets of Table 8 would be identified as follows: Sheet 1 of 10: Districts 1-5; Sheet 2 of 10: Districts 1-5; and so on to Sheet 10 of 10: Districts 1-5.

Consider now the case where not only does the stub require ten sheets, but where there are also 15 districts, so that three copies will be required of each sheet in order to provide enough column-groups to tabulate the stub items of that sheet for all districts. In this case, there will be three copies of the form devoted to material of Sheet 1, three copies devoted to material of Sheet 2, and so on to Sheet 10. The first copy of the first sheet will be identified as Sheet 1 of 10: Districts 1-5. The first copy of the second sheet will be Sheet 2 of 10: Districts 1-5; and so on through Sheet 10 of 10: Districts 1-5.

The second copy of the first sheet (for Districts 6-11) would show similarly Sheet 1 of 10: Districts 6-11; and so on through Sheet 10 of 10 for Districts 6-11.

It is desirable that primary tables be laid out so as to give each district or appraisal area the same position in all tables. This may become rather important as the tabulation proceeds, for there may ultimately be many sheets of work tables, and it will be a real convenience to know exactly where to look for different items of material for the same area. It will also help to minimize errors in copying data from the work tables.

When to use range-graphs. Graphs of the range between quartiles (explained in Chapter V) are useful in most tables where a stub item includes seven or more line items or classes of punching. Thus tables of total and subtotal scores should carry range-graphs, but they are not generally useful in tables of dwelling deficiencies (Subject 8). Descriptive tables on Subjects 2 and 3 may

[47] If, as is usually the case, totals are wanted for all of the districts, these would be shown in the sixth column-group of the first sheet.

well show range-graphs for items such as number of rooms in unit, amount of rent, number of persons in household and class of income, but not for other descriptive items.

Separate tables for rooming units; identification. Separate sheets of the Tabular Form should be prepared for rooming units for any item on which the significance of the card punching (and hence the stub information) varies from that of the dwelling unit. This means that separate rooming unit tables should be made on Subjects 2 and 3 if different punching codes are used for descriptive items such as number of rooms, amount of rent and number of occupants; and Subject 8, for dwelling deficiencies, in which several items have different significance in the two types of units. The test of quality difference and the four tables on measures of quality can be made without separating dwelling and rooming units, though such separation may be desired if rooming units comprise an important part of the problem and it is intended to study all of their characteristics separately.

If rooming units are few and scattered, it may be desirable to exclude their punch cards from all tabulations by appraisal area or district, and to tabulate them at the end of the study for the survey area as a whole, in tables of rank A. The same principle can be applied in other conditions. For example, in a large district, dwelling units might be tabulated by appraisal areas, at rank C, with rooming units segregated and tabulated only once for the district, at rank B.

Rooming unit tables are identified by the standard table numbers and rank symbols, preceded by the letter R, thus: *R 5-B*.

Duplicate tables and charts. It is good practice to make a carbon (or photostat) copy of each table or chart prepared on the standard Tabular Form. There are two reasons for this. One is to facilitate advice by mail from the staff of the Committee on the Hygiene of Housing concerning problems of interpretation; the other is to supply copies of data for the Committee's files in order to build up a comparative picture of conditions in cities using this appraisal method. A central file of analytic materials in comparable form may have great value for intensive study by national or state agencies, for research purposes in university graduate departments, and for various other purposes.

Time records for control and budgeting. It is strongly recommended that records be kept of the time required to make each table, at least for tables on Subjects 2-8 in each district. This can be done on the work tables themselves, as shown in the specimens of this appendix. The time of starting and finishing each table is entered by the clerk, and the total time required is expressed in hours and minutes. If two persons work on the table, as where one reads the Percentor scale and the other makes entries on the form, the total time should be expressed as the combined time of the two workers.[48]

Such time records should be kept both to judge whether the staff is gaining speed with experience and as a basis for budgeting staff time for later tabulations, especially in the secondary series, where wide choice is possible and the plan of tabulation should be adapted to the demonstrated speed of the office staff.

The time record for all sheets of a table should usually be kept on Sheet 1 of the table, recording the total time taken to tabulate all sheets. The time shown is, of course, that required for card sorting, punch-checking, scaling and entries on the Tabular Form.

CONSTRUCTION OF TABLES

Advance preparation of skeleton tables. Primary Tables 1-9 can be laid out (head and stub entries completed) for each district as soon as the primary test of quality difference has been made to determine whether tables for the district will be made of rank C or B. Carbon duplicates should be prepared, and entries in the head and stub should be made with a typewriter, using full capitals or lower case as indicated in the specimen. Footnotes relating to head or stub items should be made at the same time and also by typewriter. Tables in this form, without the body entries, are called skeleton tables.

The first sheet of any table should carry the fullest possible information on the three title lines, but later sheets may carry this information in condensed form only.

Body entries:[49] *marginal punch cards.* Columns *c* are used to record the scale readings from the Percentor, as shown in Chapter V, Figures 14-17. The entry made for each line item is the scale reading at the top of the punching class. In columns *c* the uppermost entry for any stub item will always be 100. The letter *c* at the head of the column signifies cumulative percentage.

Columns *d* carry the percentage distribution of cases into each punching class (stub line items). To obtain a column *d* value for any class, subtract from the column *c* value for that class the column *c* value of the class on the next line below; enter the difference in column *d* for the upper of the two classes. The column *d* value for the lowest class will always be the same as the column *c* value for that class, since zero is the value subtracted. In columns *d* the entries for any item must always total to 100. This total is always struck and entered as a check

[48] Where all column-groups of a table are completed in quick succession, as is usually the case with appraisal areas of one district, the time record shown in specimen table heading will suffice for this purpose. Where successive column-groups are completed over a longer period of time, as for rank B tables of different districts, the time record entries for the first district can be transcribed from the top lines of the table heading to the column headings of that district. The original entries are then erased, the time record for the second district recorded, and so on through all districts.

[49] Body entries can be made in ink or pencil, but a medium hard pencil is the best assurance of a legible carbon copy.

total in column *d* to confirm the accuracy of the entries. The letter *d* at the head of the column signifies distribution into classes.

Columns *m* (signifying median) are used in many tables for range-graphs showing the median value and the range between the quartiles. Range-graphs show the class containing the median value (point 50 on the Percentor scale—indicated by cross-bar in column *m*) and the classes containing the quartiles (points 25 and 75 on the scale). The length of the vertical bar between the quartiles shows the spread of the middle 50 per cent of cases (between the quartiles). The use of range-graphs is further explained in Chapter V, Section 3.

Body entries: machine punch cards. In machine tabulation columns *c* are used to record the machine count for each class, and columns *d* carry percentage distributions obtained by calculation from these entries. In this case, cumulative percentages in columns *c* are not obtained unless column *d* entries are combined to produce them. This is desirable if range-graphs are to be made. Cumulative percentages can be entered in columns *c* above the machine counts and encircled, or the machine counts can be erased and percentages substituted for them.

Special use of columns d, c and m. In charts and in some special tables the columns do not have the meanings indicated above. In these cases, the letters *d, c* and *m* can be X'd out in typing the skeleton table, but this is not essential for work tables or charts, as the eye will become accustomed to ignoring these symbols where they have no meaning.

C. Handling of Marginal Punch Cards and Percentor

CARD SORTING; OPERATIONS TO BE DEMONSTRATED

Efficient sorting of marginal punch cards depends on operations, including several simple tricks of handling, which are more easily shown than explained. The consultant will demonstrate and give the office staff practice in all these operations.[50] The topics listed below are a checklist of matters which you should clearly understand by the end of the consulting period.

1) Technique of twist-and-drop for sorting; in side and end positions.
2) Checking for completeness of sort (avoiding stragglers).
3) Sorting with one-hole item: small and large batches.
4) Sorting with multi-hole item: from right to left for small batches; from left to right for large batches.
5) Sorting from back of cards for holes near left end.
6) Hand-sort within a punching class, for scaling by reversed corner cuts.
7) Special sort in corner position to organize jumbled cards.
8) Use of major and minor dividers to record a sort.
9) General care and handling of punch cards.

[50] Coaching is also available in most cities from the local representative of the punch card manufacturer.

PUNCH-CHECKING

The need for punch-checking with marginal punch cards has been explained in Appendix C-3. While this operation will also be demonstrated by the consultant, exact instructions for it are given below, for reference after the consulting period.

Punch-checking is done for the punching classes or line items of each stub item in the table. For example, in punch-checking for Table 4, the purpose is to assure that the class of total score is correctly punched on every card.

The operations are as follows:

1) Sort cards by class of the stub item to be tabulated.
2) Remove from the pack the cards for the class of lowest number. Fan out the cards, grasp one end or side of the cards firmly and at the opposite end or side release the cards one by one as rapidly as will permit scanning for the score or descriptive entry which is being checked. Fix the eye on the position of the *written* entry being checked, and scan each card as it appears.
3) Remove any card on which the *written* entry does not conform to the class punched.
4) Repeat steps 2 and 3 for all other punching classes of the item.
5) Correct the punching of cards removed from the pack, using the standard gummed correction pasters. Allow time for drying of the paster if necessary before repunching. Replace corrected cards in their proper classes in the pack.
6) Make scale readings and entries on the Tabular Form (including the checkmark for punch-checking itself) only after punch-checking as above.

If tables are prepared in the standard sequence, with primary before secondary tabulations, every position on every card will have been punch-checked on the completion of primary tables, and secondary tables can be made without further checking. If the sequence of tabulation is varied from the standard scheme, a system of Progress Control Tables such as that illustrated in Figure C6 should be used to provide a systematic record of punch-checking.

USE OF THE PERCENTOR; OPERATIONS TO BE DEMONSTRATED

The consultant will demonstrate the use of the Percentor, using a compact model of the device.

It is usually most efficient for one person to read the Percentor scale and a second person to make entries in the body of the table. Accuracy of the entries in columns *c* (and of the scale readings) can be checked as an integral part of this operation by having the table-maker call back the readings to the scale-reader, who confirms them on the scale. If range-graphs are being plotted, the table-

maker should also call back to the scale-reader the classes which, according to his record, must contain the median and quartile values. The scale-reader then confirms the classes which contain scale points 25, 50 and 75.

Card-sorting and punch-checking operations preliminary to each set of scale-readings and entries can be divided between the two workers according to the size of card batches being handled, leaving time for the table-maker to complete the entries in columns *d* and to calculate, if desired, exact values of median and quartiles.[51]

Under this scheme, the initials of both workers are recorded in the head of the table, and the time record on the table shows the total time of both persons.

Operations to be demonstrated by the consultant, which should be understood by the end of the consulting period, are as follows:

1) Test for accuracy of card compression in the Percentor, using colored stop cards.
2) Standard tabular entries from the Percentor, including construction of range-graphs.
3) Batch-sorting: for card-groups which exceed the capacity of the Percentor.
4) Card counts and transcription to percentage: for card-groups too small to be scaled efficiently.

Instructions for operations 3 and 4 above are also given in Section G of this appendix.

D. Primary Tables

SPECIMENS

Specimens showing the layout of skeleton primary tables are given in Figures C27-C33. A hypothetical district consisting of four appraisal areas has been chosen, and tables for these areas with district totals (rank CB) are illustrated.[52] Where a table consists of several sheets, only the first of these is shown, but the content of later sheets is explained. The consultant will supply a model set of tables including all sheets of each, the layout of which can be modified locally as needed.

Specimen tables are laid out here with stub line items as used with the marginal punch card. Stub details may vary from the practice shown if machine tabulation is used.

In the hypothetical district rooming units are an unimportant fraction of the total housing supply, and it is assumed that tables for these would be made at the end of the study—at rank A for the survey as a whole.

PRIMARY TEST OF QUALITY DIFFERENCE: CHART O

The purpose and method of making this test are described in Chapter V, Section 4, to which you should refer. Since Figures 19 and 20 of that chapter illustrate the completed test, no specimens are given here.

General features. Charts of this test, which count as work tables, are always made of rank D: by blocks or sampling areas.

If with machine tabulation it is impracticable to make machine runs for card groups as small as those for blocks, the test of quality difference can be made by hand-sorting the appraisal forms (by punching class or absolute score) for each score used in the test. Median values are then found by dividing the arrayed appraisal forms into equal groups.

Note that a choice is possible in the scores to be used as factors in this test. Housing, dwelling and facilities scores or dwelling, facilities and occupancy scores are usually best. Where very sharp differences are expected between blocks, it would be possible to make the test for all blocks in terms of the broadest quality measure (housing or dwelling total score) first, and the differences in this showing alone might justify the designation of appraisal areas without testing for the other factors. Since the full test is quickly made, this short-cut is not recommended.

Note that the condensed chart of this test, shown in Figure 20, Chapter V, is usually preferable to the expanded form shown in Figure 19.

Handling of cards; entries. Exclude cards for units with scores incomplete, returning them to the card file behind their block dividers. Count the completely scored cards for each block (dwelling and rooming units combined) and enter the number of these at the head of the column for each block as shown in Figure 20.[53]

The test of quality difference will usually be made block-by-block, but where a group of blocks is known to contain some frontages of quite different character from the remainder it will be desirable to separate the cards for these special frontages and test them separately. This might be the case where multi-story dwellings occur only along an arterial business frontage. The director should determine whether such special treatment is necessary.

Sort cards of the first block for the first score shown in layout of the table (usually either housing or dwelling total score). Punch-check this score and correct this punching, if necessary, as explained in Section C. Record this punch-checking by a checkmark at the foot of the column, as shown in Figure 20.

Break the pile of sorted cards into two groups, placing the front half of the pack face down on the table, the rear half face up. Level off the piles until they are of

[51] The method for such calculations is given in Section G.

[52] The control tabulation (Figure C27) has been completed with body entries as well as skeleton layout. From the body entries it can be seen which counts (all units, completely scored units only, etc.) are transcribed from the control tabulation to the column-group headings of each later table.

[53] Rooming unit and dwelling unit cards may be separated and given separate tests of quality difference if the director feels this to be essential, but this practice is not recommended. The purpose of the test is to determine quality by areas, not by type of housing. Later tabulations give ample opportunity for separate analysis of rooming units.

equal height.[54] Note the punching class for the score being tested which appears on the card on the top of the pile facing upward. Note whether the same class of punching extends to the face down pile. If so, enter a crossbar in the middle of the corresponding class in the appropriate column on the Tabular Form. If the class of punching changes at the break between the two piles, enter the crossbar boldly over the entry line which separates these two classes on the Tabular Form.

Repeat the above operations for other scores being tested.

Connect the resulting crossbars with a heavy line as shown in Figure 20.

Repeat all operations above for each other block or sampling area in the district being tabulated.

Determination of appraisal areas. Results of the test of quality difference will be interpreted by the director. For districts containing not over 20 to 30 blocks, the determination of appraisal areas can usually be made directly from the patterns of Chart O. For larger districts, however, it may be necessary to plot the results on a map, to emphasize the conditions in adjoining blocks. In this case, small numerals can be entered in each block on the map to show the punching class of its median score for each factor of the test. Other map treatments of the test of quality difference will be explained by the consultant. If blocks are combined into appraisal areas, the numbers of these will be noted at the foot of Chart O-D, as in Figure 19. Punch cards will then be regrouped according to these appraisal areas and the new area numbers will be punched in a field reserved for this purpose (see Figure C14). At this point, temporary block dividers used in punch card filing can be destroyed, and the permanent guides for appraisal areas or districts will come into use.

Advance layout of skeleton tables. Interpretation of the test of difference will determine whether appraisal areas or districts are to be used as the basis for the remaining primary tables. Immediately after this decision, skeleton Tables 1-9 should be laid out on the typewriter. The rank of these tables should, of course, be agreed on by the dwelling and environmental survey directors, to assure comparability of related tables from the two surveys.

Note that the test of difference accomplishes the punch-checking needed for three of the total and subtotal scores. If scores used in the test of difference are housing, dwelling and facilities scores, punch-checking will not be needed for these factors in Tables 4 and 6. As soon as these skeleton tables have been laid out, punch-checking can be recorded on them (these three scores only) for appraisal areas or districts for which the test of difference has been completed. This will prevent duplication of punch-checking later.

[54] With small blocks it may be quicker to find the center of the pack by counting the cards.

DESCRIPTIVE TABLES 1-3

Control tabulation: Table 1. Sheet 1 of this is illustrated in Figure C27. The layout of sheets 2 and 3 will be provided by the consultant. The same is true of other multi-sheet tables described below.

GENERAL FEATURES. The control tabulation is basic to the accuracy of all later work, and is the definitive source of reference for numbers of units or households in all later tables and text. Results of the control tabulation are shown in later tables by repeating the control count of units in the headings of column-groups. Thus the size and importance of any area or other grouping in the tabulation is always evident. Control tabulations of blocks and frontages in the environmental survey are made by the staff of that study.

The practical value of the control tabulation is explained in Chapter V, Section 5.

LAYOUT AND CONTENT. This table is made of rank C or B, and is ultimately totalled to rank A by simple addition. Sheet 1 of this table, shown in Figure C27, covers dwelling units and rooming units; Sheets 2 and 3 cover, respectively, structures of the dwelling survey and block data of the environmental survey.

If rooming units are omitted from the survey, one sheet will carry 18 appraisal areas or districts, by using a single column for each. If this practice is followed on Sheet 1, it should also be followed on Sheets 2 and 3. If, however, the arrangement shown in Figure C27 is used, one column-group should be used for each area or district in Sheets 2 and 3, devoting column *c* of each column-group to the tabular entry. This insures comparable arrangement of data on all sheets of the table.

HANDLING OF CARDS; ENTRIES.[55] Complete Sheet 1 as follows:

Handle first all cards with scores complete for the first area or district. Sort for dwelling and rooming units. If these two types were punch-checked in processing, show this with checkmarks in the column headings, as in Figure C27. If not, punch-check for type of unit and enter checkmarks before proceeding.[56] Count completely scored units of each type, record the counts on line A1, and total them on the same line.

Remove incompletely scored cards from the file. Record punch-checking for scores complete and incomplete (which will have been punch-checked in processing) on the line below line item A3. Sort, count and enter totals for dwelling and rooming units on line A2.

Total on line A3 the entries in each column, and check the result by adding across on line A3.

Sort incompletely scored dwelling unit and rooming

[55] Since this table does not involve use of the Percentor, the same person can handle the cards and make the entries for each area or district. Different workers can handle different areas concurrently.

[56] This is the only instance in the standard tabulation practice where punch-checking covers a breakdown shown in column headings; in all other operations punch-checking relates to the stub information.

CONTROL TABULATION: Dwelling Units and Rooming Units: Number of units by source of data, with status of score, by appraisal area with district totals

SHEET 1 of 3 District 1 TABLE 1-CB

STUDY SPECIMEN

Readings DEF Entries DEF Date 1/23/45

Appraisal Area	Area 1			Area 2			Area 3			Area 4						All (District 1)		
Type of Unit/Punch-checked	DU ✓	RU ✓	All	DU ✓	RU ✓	All	DU ✓	RU ✓	All	DU ✓	RU ✓	All				DU	RU	All
ITEM	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
A: UNITS: PUNCH CARDS																		
1) Scores complete	468	14	482	164	21	185	210	-	210	40	-	40				882	35	917
2) Scores incomplete*	12	1	13	10	-	10	6	-	6	-	-	-				28	1	29
3) Total	480	15	495	174	21	195	216	-	216	40	-	40				910	36	946
Punch-checked	✓	✓		✓	✓		✓			✓								
B: UNITS: DWELLING SERIAL LIST																		946
C: UNITS: 1940 CENSUS																		955
D: RATIO (%) AS TO C																		99
E: SCORES INCOMPLETE																		
1) Vacant units (Tenure 3)																16	-	16
2) Occupied units (Tenure 0-2)																12	1	13
3) Total																28	1	29
Punch-checked																✓	✓	

*Breakdown given in item E.

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FIGURE C27. CONTROL TABULATION: TABLE 1

unit cards by tenure. Punch-check these cards only for tenure and record the punch-check by checkmark. Count, enter and total the number of incomplete cards for vacant dwelling and rooming units and for those with other forms of tenure (occupied). Check the result by adding totals across, as specified above, and check the total against the total in line A2.

Refer to the Dwelling Serial List and enter the total number of units in the area or district in column All for stub item B. Compare this figure with total for line item A3 and investigate any discrepancy between the two. Explain in a footnote if the totals cannot be reconciled.

Refer to the 1940 Housing Census Bulletin and enter in column All for stub item C the total count of dwelling units for blocks comprising the area or district. Compute the percentage ratio of total A3 to C and enter on the line provided.

Repeat the operations for other appraisal areas or districts. If desired, the entries for stub items B and C can be omitted for appraisal areas in a table of rank CB, and made only for the district, as illustrated in Figure C27. The same can be done for the breakdowns of incompletely scored cards by type of tenure. Only if unusual conditions occur under any of these entries need the breakdowns be carried to the smaller areas.

For Sheet 2, master cards are sorted out, and these only are tabulated, with entries similar to those on Sheet 1. No punch-checking is recorded on this sheet, since it was accomplished for master cards in connection with Sheet 1.

Sheet 3 is tabulated by the environmental survey staff by tallying from Block Appraisal Forms. Copies of these block and frontage tabulations should be supplied to the dwelling survey staff and filed with other sheets of the control tabulation.

Description of housing: Table 2. Sheet 1 of this table is illustrated in Figure C28. Sheets 2-5 give all the

DESCRIPTION OF HOUSING: Dwelling Units: (Time Fin) SHEET 1 of 6 District 1 TABLE 2-CB

Percent of all DU in structures with stated (Begun) STUDY SPECIMEN

characteristic, by appraisal area with district total (Hr/Min) Readings ____ Entries ____ Date ____

Appraisal Area / Total DU (Punch cards)	Area 1 / 480 DU			Area 2 / 174 DU			Area 3 / 216 DU			Area 4 / 40 DU						All (District 1) / 910 DU		
I T E M: Class	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
A: UNITS IN STRUCTURE	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3) With RU, any number	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2) 7 DU or more	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) 3 - 6 DU	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) 1, 2 DU*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
B: TYPE OF STRUCTURE (Constr.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) 3 story or more, wood exter.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C: ACCESS TO STRUCTURE**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) Alley or rear yard	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) Street	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*May include cases not reporting number of units in structure. **Deficiency item 1.

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FIGURE C28. DESCRIPTION OF HOUSING: TABLE 2

remaining descriptive characteristics of dwelling units in similar fashion; Sheet 6 gives descriptive characteristics of structures.

This table is made of the rank determined by the test of difference: commonly rank CB.

Note that this and all later primary tables are laid out in skeleton form immediately after completion of the test of quality difference.

LAYOUT AND CONTENT. Separate sheets of Table 2 will be required for dwelling and rooming units if different punching is used for descriptive items such as class of rent or number of occupants.[57] In this case, as in all others where rooming units are separately tabulated, the letter R is prefixed to the table number, the subtitle shows rooming units instead of dwelling units, and sheets are numbered separately from those of dwelling units.

Note that deficiency item 1 is tabulated at the bottom of Sheet 1 of this table as a descriptive item; the same is true of deficiency item 7, appearing on Sheet 3. Entries for both of these items can be transcribed to Table 8, avoiding a duplicate sort of these items for the deficiency table.

If local schedule items cover descriptive characteristics, these items will be included in laying out the stub of this table and Table 3.

The skeleton table shows as a typewritten heading entry the total number of Unit Punch Cards (completely scored and incompletely scored combined), taken from the control tabulation. Note that the totals for this table and Table 3 will differ from the totals shown in all later primary tables, which deal with completely scored units only.

HANDLING OF CARDS. Combine the cards for completely and incompletely scored units before making this table. Provision is made for incomplete cards by the breakdowns in various stub items between units reporting

[57] Separate Sheets 1-5 only are required; Sheet 6 is not affected.

DESCRIPTION OF OCCUPANTS of Dwelling Units: (Time (Fin (Begun (Hr/Min

SHEET 1 of 3 District 1 TABLE 3-CB

Percent of households (occupied DU) with stated characteristic, by appraisal area with district totals

STUDY SPECIMEN

Readings _____ Entries _____ Date _____

Appraisal Area / Total Households	Area 1 474			Area 2 166			Area 3 214			Area 4 40						All (District 1) 894		
I T E M: Class	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
A: RACE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1) Nonwhite	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
0) White	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total/Punch-checked	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B: LODGERS	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1) With lodgers	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
0) Without lodgers	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total/Punch-checked	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C: DOUBLING OF FAMILIES*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1) Doubled in unit	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
0) Not doubled	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total/Punch-checked	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*Deficiency item 30.

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FIGURE C29. DESCRIPTION OF OCCUPANTS: TABLE 3

each descriptive characteristic and units not reporting.

In this and all later tables, cards are handled by scaling in the Percentor. Groups of cards too small to be scaled accurately or efficiently, as for example in Appraisal Area 4 of the specimen, are handled by counting. Counts are entered in column *c* and percentages are entered in column *d* by calculation, as previously described for machine tabulation. Cumulative percentages must then be added in column *c* if range-graphs are desired.

The necessary punch-checking is specified in the stub layout of the skeleton table. Note that some stub items do not require punch-checking. An example of this is stub item D2 on Sheet 2 where the punching of number of rooms in unit will have been punch-checked in connection with stub item D1 (this example will appear in the complete set of model tables supplied by the consultant). Note that no punch-checking is required for Sheet 6 (structures), since punch-checking of master cards will have been completed in connection with earlier sheets of this table.

ENTRIES. Punch-checking is recorded before any other entry for a stub item.

Range-graphs need be made only for stub items having seven or more punching classes or line items.

Description of occupants: Table 3

GENERAL FEATURES. The organization and entries of this table are generally similar to those of Table 2, but it deals with households of occupied units. In addition to Sheet 1, shown in Figure C29, Sheet 2 shows number of persons in household; Sheet 3 gives distribution of monthly income, if enumerated.

LAYOUT AND CONTENT. Doubling of families, deficiency item 30, is shown here as a descriptive item. The data are transcribed to Table 8, avoiding a double handling of the cards as in the case of items 1 and 7 on Table 2.

Note that the number of households shown in the column-group headings will usually differ from the

DISTRIBUTION OF TOTAL SCORES: Housing: (Time Fin (Begun (Hr/Min — SHEET 1 of 4 District 1 — TABLE 4-CB

Percent of completely scored dwelling units with score in stated class, by appraisal area with district total — STUDY SPECIMEN

Readings _____ Entries _____ Date _____

Appraisal Area / Total Scored DU	Area 1 468 DU			Area 2 164 DU			Area 3 210 DU			Area 4 40 DU						All (District 1) 882 DU		
Class HOUSING TOTAL SCORE	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
15) 280 points or more	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14) 260 - 279 points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13) 240 - 259 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12) 220 - 239 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11) 200 - 219 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10) 180 - 199 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9) 160 - 179 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8) 140 - 159 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7) 120 - 139 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) 100 - 119 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) 80 - 99 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) 60 - 79 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) 40 - 59 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) 20 - 39 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1) 1 - 19 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0) 0 "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total/Punch-checked																		

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FIGURE C30. DISTRIBUTION OF TOTAL SCORES: TABLE 4

number of units shown in Table 2. Number of households is taken from Sheet 1 of Table 1 by adding the number of units with score complete (line item A1) to the number of units with scores incomplete in tenure class 0, 1 or 2 (occupied). This may require separate handling of the incomplete cards.

If local descriptive items have been added, these will of course affect the stub layout of this table.

Separate tabulation of the data on Sheets 1 and 2 of this table will be needed for rooming units if a different punching code has been used for number of persons in household, or if separate descriptive information is wanted because of the importance of rooming units. For rooming units the only item on Sheet 1 which is pertinent is stub item A: Race. Sheets 1 and 2 could therefore be combined for rooming units by condensing the stub line items for number of occupants.

HANDLING OF CARDS. Completely and incompletely scored cards for occupied units are combined, but cards for vacant units are excluded.

ENTRIES. Entries are made in the standard manner. Range-graphs are useful only for number of persons in household and for monthly income.

QUALITY TABLES 4-7

General instructions. The layout of tables on scores and number of basic deficiencies (Subjects 4-7) will not be affected by inclusion of local schedule items or omission of standard items. Rooming units need not ordinarily be separated from dwelling units for these tabulations. The significance of these tables and of charts prepared from them is indicated in Chapter V, Section 5.

These tables are made of the same rank as descriptive Tables 1-3. For all tables in this group, only the completely scored cards are tabulated. The count of these is taken from the control tabulation and entered in the column-group heading. Cards incompletely scored are returned to the file, where they become inactive. They

DISTRIBUTION OF BASIC DEFICIENCIES BY NUMBER: (Time Fin (SHEET 1 of 1 District 1 TABLE 5-CB

Percent of completely scored dwelling units with stated num- (Begun STUDY SPECIMEN

ber of deficiencies, by appraisal area with district total (Hr/Min Readings _____ Entries _____ Date _____

Appraisal Area / Total Scored DU	Area 1 / 468 DU			Area 2 / 164 DU			Area 3 / 210 DU			Area 4 / 40 DU						All (District 1) / 882 DU		
Class NUMBER BASIC DEFICIENCIES	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11) 11 basic deficiencies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10) 10 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9) 9 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8) 8 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7) 7 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6) 6 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5) 5 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4) 4 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3) 3 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2) 2 " "	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) 1 basic deficiency	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) No basic deficiencies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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FIGURE C31. DISTRIBUTION OF BASIC DEFICIENCIES BY NUMBER: TABLE 5

can be put behind a separate file guide, with temporary or permanent minor guides for districts or other areal divisions if desired.

Note that some of the punch-checking for Table 4 and Table 6 will have been done in connection with the test of quality difference, and should be recorded on these tables in advance of other body entries as a reminder that this process need not be repeated for the scores involved.

The quality tables are the simplest of any in the primary series; card-sorting, punch-checking and tabular entries all proceed in the standard fashion without special features except as noted below for the separate tables. Range-graphs are essential for all tables in this group.

Total scores: Table 4. In addition to Sheet 1, shown in Figure C30, Sheet 2 shows distribution of dwelling scores, and Sheet 3 gives distribution of environment scores. These three sheets are prepared from dwelling punch cards in the standard fashion. Sheet 4 is a tabulation of environment scores as distributed by block frontage rather than by dwelling units. This sheet is prepared by the environmental survey staff by tallying from the Block Appraisal Form. Copies of this sheet should be supplied to the dwelling appraisal staff and filed in the regular manner.

ENVIRONMENT SCORES TABULATED BY DWELLINGS AND BLOCKS. Since Sheets 3 and 4 of this table give the same information in different forms, a word of explanation is in order. Punching of the Environment Total Score on the dwelling punch cards gives opportunity to analyze the distribution of environmental penalties by dwelling units. This distribution of the data is not available to the environmental survey staff from their appraisal forms, which of course show the distribution only by blocks and frontages. This latter basis is adequate for mapping and many other purposes of environmental interpretation, but it does not permit evaluation of

DISTRIBUTION OF SUBTOTAL DWELLING SCORES: Facilities: (Time Fin / Begun / Hr/Min) SHEET 1 of 3 District 1 TABLE 6-CB

Percent of completely scored dwelling units with score STUDY SPECIMEN

in stated class, by appraisal area with district total Readings _____ Entries _____ Date _____

Appraisal Area / Total Scored DU	Area 1 468 DU			Area 2 164 DU			Area 3 210 DU			Area 4 40 DU						All (District 1) 882 DU		
Class FACILITIES SUBTOTAL SCORE	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
15) 140 points or more	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14) 130 - 139 points	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
13) 120 - 129 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
12) 110 - 119 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11) 100 - 109 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10) 90 - 99 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9) 80 - 89 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8) 70 - 79 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7) 60 - 69 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6) 50 - 59 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
5) 40 - 49 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4) 30 - 39 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3) 20 - 29 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2) 10 - 19 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1) 1 - 9 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
0) 0 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total/Punch-checked																		

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FIGURE C32. DISTRIBUTION OF SUBTOTAL DWELLING SCORES: TABLE 6

environment scores in terms of the number of units or families affected by good or poor environmental conditions. A block with six dwellings will count as heavily in a map or in a table prepared from Block Appraisal Forms as will a block with 50 units. Analysis of environment scores from dwelling punch cards will not be subject to this distortion. Tabulations from the punch cards rather than from Block Appraisal Forms should therefore be used for any analysis which concerns the extent of poor environment among families as distinct from the extent of poor environment on an areal basis. Copies of Sheet 3 of Table 4 might be made for the environmental survey staff to permit supplementary analysis of their data.

SPECIAL USE OF TABLE 4: DESIGNATION OF QUALITY GRADES. The data of Table 4 are commonly used to classify appraisal areas or districts into quality grades, as the basis for presentation tables and maps such as those used in Part I of this publication. Each area is classified into quality grade A, B, C, D or E according to its median score for housing, dwelling or environmental conditions.[58] Because of this, it is usually desirable to calculate exact median values (and quartile values also) for these scores (excluding Sheet 4) and to show these values next to the range-graph for each area or district, as indicated in Figure 18. When quality grades have been determined for areas or districts (as explained at the end of this section, under Special Operations), the grade of each should be noted at the foot of the table below the appropriate column-group. This will save time and avoid errors in preparing later maps and tables on the basis of quality grades.

Basic deficiencies: Table 5. This is a one-sheet table, shown in Figure C31. Only 13 basic deficiencies can

[58] It is assumed here that the recommended practice in determining quality grades will be followed: basing these on total scores rather than on number of basic deficiencies. Where number of basic deficiencies is used as the criterion for dwelling quality grades, Table 5 will of course be used for this purpose.

DISTRIBUTION OF DWELLING DEFICIENCIES BY TYPE: Facilities: (Time (Fin (Begun (Hr/Min — SHEET 1 of 10 District 1 — TABLE 8-CB

Percent of completely scored dwelling units with stated deficiency, by appraisal area with district total — STUDY SPECIMEN

Readings _____ Entries _____ Date _____

Appraisal Area / Total Scored DU	Area 1 468 DU			Area 2 164 DU			Area 3 210 DU			Area 4 40 DU						All (District 1) 882 DU		
ITEM: Class: Score	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
1: MAIN ACCESS TO STRUCTURE	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) Alley or rear yard: 3.6 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) Street: 0 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2: WATER SUPPLY (SOURCE)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) Private or none: 3.8 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) Public: 0 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3: SEWER CONNECTION	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) Private or none: 3.8 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) Public: 0 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4: DAYLIGHT OBSTRUCTION	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1) Substantial to extreme: 5-20 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0) None or moderate 0.2 pts.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total/Punch-checked	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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FIGURE C33. DISTRIBUTION OF DWELLING DEFICIENCIES BY TYPE: TABLE 8

occur, and since central urban districts will seldom show two of these (deficiency items 2 and 3, water supply and sewer connection), only 11 basic deficiencies are provided for in the stub layout of the specimen.

Subtotal dwelling scores: Table 6. Figure C32 shows Sheet 1 of this table, distribution of facilities scores. Sheets 2 and 3 treat maintenance and occupancy scores in identical fashion. There are no special features or problems in this table.

Subtotal environment scores: Table 7. This table, giving the distribution of subtotal environment scores for land crowding, nonresidential land use, traffic hazards, etc., is prepared by the environmental staff from the Block Appraisal Forms. No specimen is given here, but copies of the completed table should be supplied to the dwelling survey staff for reference.

There are two circumstances in which dwelling survey staffs might tabulate the subtotal environment scores. One is with machine tabulation, where layout of the Hollerith card may permit punching of these subtotal scores as well as subtotal scores for dwelling conditions. The other is where the w, x, y, z positions on the marginal punch card have not been used for local dwelling schedule items and thus become available for punching environmental subtotal scores. In this case, hole V of the punch card can be added to this group, making it possible to punch each of the five principal subtotal environment scores on the basis of a qualifying score (explained under coding). If this is desirable, arrangements will be made by the consultant. Tabulation of the subtotal scores by dwelling units from the punch cards has the same advantage of correcting for density of settlement as indicated in the discussion of Table 4, above.

DEFICIENCY TABLES 8 AND 9

General instructions. These are the bulkiest and most time-consuming of all primary tables, and it may be

justified to construct them of a higher rank than the other tables in order to conserve time. For instance, in the hypothetical study represented by the specimen tables, rank C tabulations might be omitted for Table 8, constructing this table of rank BA only for the districts and total survey. In this case, quality Tables 4-6 of rank C would give fairly good indication of the ways in which appraisal areas depart from the overall characteristics of the districts containing them.

If the rank of Table 8 is changed from that used for earlier tables, this should be agreed to between the dwelling and environmental survey directors in order that Tables 8 and 9 will be comparable.

Dwelling deficiencies: Table 8. In addition to Sheet 1, shown in Figure C33, about nine sheets will usually be required for the stub items of this tabulation.

LAYOUT AND CONTENT. The number of sheets may vary with inclusion of local items or omission of standard items, or with the degree of breakdown which is desired. Appropriate skeleton layouts will of course be made locally with advice of the consultant.

Rooming units will require separate sheets of this table, which is another reason for making it of the highest reasonable rank.

STUB PROVISION FOR HAND-SORT. It may sometimes be advantageous to provide in the stub layout for supplementary hand-sorts within the punching classes of marginal punch cards. For instance, in deficiency item 4, Daylight Obstruction, only two punching classes are provided, and all scores of 5 points or over will be grouped together in the standard sort. If daylight obstruction is a serious condition in the locality, it may be desirable to hand-sort the slotted cards to get discriminations between scores of 5, 8, 10, 15 and 20 points. Cards regrouped by hand-sorting in this manner can be scaled in the Percentor—despite the fact that there is no special punching—by reversing the corner cuts, as will be demonstrated by the consultant.

Similar added discrimination may be wanted for some of the occupancy items in a city where overcrowding is extreme, and deficiency items 1 and 7 may sometimes warrant a supplementary hand-sort. It is not intended here to over-stress supplementary hand-sorting, for it has seldom been found necessary. The point is that if it is desired the economical time to provide for it is when skeleton tables are being laid out—including Table 2 if deficiency items 1 and 7 are to be hand-sorted.

HANDLING OF CARDS; ENTRIES. Table 8 deals only with completely scored cards. Sorting, punch-checking, scaling and entries are carried out in the standard fashion.

Note that deficiency items 1, 7 and 30 can be entered on this table by transcription from earlier tables as noted above.

Since no stub item of this table carries more than four line items or punching classes, range-graphs need not be made on any sheet of this table.

SPECIAL USE OF TABLE: DESIGNATION OF BASIC DEFICIENCIES. While the stub layout does not identify basic and nonbasic deficiencies, the percentage occurrence of basic deficiencies can be determined from this table by noting the percent of cases which have penalty scores at least as great as the qualifying level for basic deficiency under the given item (10 points except for items 10 and 22; 8 and 15 points for these, respectively).

SPECIAL SUMMARY CHART. A most useful type of chart can be made from Table 8, which will summarize all dwelling deficiencies on a single sheet of the Tabular Form. This is done by grouping the 30 deficiency items of Table 8 into the 14 categories discussed in Chapter II, Section 5. Instructions for this, with a specimen, are given in Section F of this appendix.

Environment deficiencies: Table 9. This table, paralleling Table 8 and giving the distribution of scores for the 24 environmental appraisal items by block frontage, is prepared by the environmental survey staff from the Block Appraisal Forms. It requires several sheets, and copies should be supplied to the dwelling survey staff. (See footnote 66).

SPECIAL OPERATIONS INVOLVING PRIMARY TABLES

Classification of areas by quality grade. The two principal values of classifying appraisal areas or districts of similar character into five quality grades from A to E were illustrated in presentation of the New Haven survey results in Part I. These advantages are, first, that grade classifications permit the use of descriptive terms such as Slum and Substandard Area, which will be understood by the layman and which are based on exact criteria and clear definitions; and, second, that it permits grouping of a large number of generally similar areas into five groups for presentation in concise tables and intelligible maps.

There may be surveys in which the range of conditions is narrow and the device of quality grades would serve little purpose, but designation of such grades is commonly desired.

The best method of grade classification is to assign each appraisal area or district to a quality grade from A to E according to the median penalty score for that area or district as determined by the punch cards (disregarding environment scores as tabulated from Block Appraisal Forms). No standard formula can be given for class intervals to be used as the basis of quality grades, but experience suggests that a scheme of 30-point class intervals for dwelling and environment scores, and 60-point intervals for the combined housing scores, as shown in the table below, will generally give a useful five-part classification. Under this scheme, for example, an area with median Dwelling Total Score from 0 to 29 points inclusive would be assigned to dwelling quality grade A; an area with median Environment

Total Score between 30 and 59 points would fall in environmental grade B, and an area with median Housing Total Score between 120 and 179 points would be of housing grade C.

CLASS INTERVALS FOR DETERMINATION OF QUALITY GRADES

Median Score of District or Appraisal Area

Quality Grade	*Dwelling Score*	*Environment Score*	*Housing Score*
A	0 – 29 points	0 – 29 points	0 – 59 points
B	30 – 59 "	30 – 59 "	60 – 119 "
C	60 – 89 "	60 – 89 "	120 – 179 "
D	90 – 119 "	90 – 119 "	180 – 239 "
E	120 and over	120 and over	240 and over

In assigning appraisal areas or districts to quality grades from the table above, median scores are taken from Table 4, Sheets 1, 2 and 3.[59] The quality grade of each area is recorded at the foot of its column-group in Table 4, for reference in all later tables or mapping.

Where the abridged environmental survey is used, the class range for environment scores should normally be reduced to 20 points in place of the 30 points in the table above. If a greater disparity than 10 points exists, however, between the class ranges of the dwelling and environment appraisals, it may be inadvisable to combine dwelling and environmental scores to obtain a classification of housing quality.

In a study with large districts and so many appraisal areas that a regrouping of these by quality grades will obviously be needed to conserve time in tabulation, punch cards might be regrouped after analysis of Table 4 so as to combine the cards for all appraisal areas of a given quality grade within a district. Appropriate card file dividers would be used to identify these groupings. Later primary tables would then be made of rank CCB, using one column-group for each of the quality grades A to E, and the sixth column-group for district totals. Groupings for this purpose may be either by dwelling quality grades or housing quality grades. One basis or the other should be used consistently for later tables.

[59] Dwelling quality grades of the New Haven areas were established, for the purposes of Part I, from the incidence of basic deficiencies, to illustrate the application of the terms Substandard and Slum, with precise meanings, to quality grades D and E. (See Part I, pp. 15, 16, including footnote 11.) Where the dwelling appraisal is to be combined with environmental results to obtain a measure of total housing quality, the grade classification must be made on the basis of point scores. To new users of the method, it is suggested that the point score basis be used altogether for determining quality grades in any study which combines the dwelling and environmental appraisals. This avoids possible confusion as to the shift in basis between the grade classification for dwellings and that for the environment. It has been noted that the scores ran smaller in the 1944 New Haven study than would have been the case had the maintenance items of the dwelling appraisal not been abridged, and had the full environmental schedules been used. For this reason, the range of scores in each environment and housing quality grade of the New Haven study (Part I, Figures 4 and 5) was smaller than would ordinarily be the case.

Derivation of primary from secondary tables. In Chapter V, discussion of Figure 20, it was indicated that in districts which do not break down into appraisal areas but are tabulated at rank B, economy may result from deriving the primary tables from the secondary tables. This economy results from the following principle: if the characteristics of an entire category are wanted (as the distribution of scores for a whole district) and if also the characteristics of parts of that category are wanted (as the distribution of scores by any system of breakdowns in the district), it is usually more economical to tabulate first the characteristics of the parts and then to get the characteristics of the whole from tabulations of the parts. In the usual sequence of tabulation, this principle is followed by tabulating for appraisal areas at rank C, and obtaining rank B totals from the subclassifications. In a case such as that of Figure 20, however, there is no justification for areal breakdown of the district into appraisal areas. Therefore, it will be economical to determine whether other breakdowns of the district will be desired in secondary tabulations (in this case, for instance, a secondary breakdown between street and rear dwellings would be desirable). If so, these breakdowns of the district are used as the subclassifications from which rank B primary tables are built for the district as a whole.

The principle stated above is a special version of the first principle expressed in Chapter V: that economy in analysis depends on early disclosure of significant breakdowns. Where it is used to obtain primary from secondary tabulations it means, of course, a conscious shift from the customary geographic breakdowns of the district to descriptive breakdowns at an early stage of the analysis.[60]

In a situation such as that shown by Figure 20, this principle can be followed and definite savings achieved with marginal punch cards by the following steps (considering the primary test of quality difference to be Step 1):

Step 2. Make primary descriptive tables and charts for the district as a whole (1-B through 3-B).

Step 3. Make secondary tests of difference (Charts 10 and 20) of rank B for the district, using those descriptive characteristics of housing and occupants which appear significant from Charts 2-B and 3-B.

Step 4a. Make secondary tabulations of quality (Tables 14-B through 16-B and/or Tables 24-B

[60] With machine tabulation, to follow this principle means only to total the counts for subclassifications. With marginal punch cards, however, counts do not appear except in control tabulations, and combining the partial tabulations would mean converting percentages to absolute values (counts) and back again to percentages by calculation. The simplest method with marginal punch cards, therefore, is to reassemble the cards, class by class, after the partial tabulation, and then rescale percentages for the district. If the reassembled cards exceed the capacity of the scaling device, the same result can be obtained by calculation from the partial tables or by batch-scaling, both explained in Section G.

through 26-B) by descriptive breakdowns which Step 3 shows to be significant.

Step 4b. After tabulation of each subject in Step 4a, reassemble the cards class by class, rescale them for district totals, and construct the corresponding primary table of rank B. This step produces primary Tables 4-B through 6-B.[61]

Step 5a. Make secondary analysis of dwelling deficiencies (Table 18 and/or 28) by descriptive breakdowns chosen in Step 3.

Step 5b. Treat the cards as specified in Step 4b, producing primary Table 8-B. In this case, cards are reassembled after each tabulation for a stub item of the secondary table.

In this manner primary Tables 4, 5, 6 and 8 are produced of rank B without sorting punch cards for the district as a whole. This is especially important in the case of Table 8, which takes more time than any other, and should not be made initially of rank B if it can be derived from breakdowns for a district.[62]

Tabulations by structure (from master punch cards). Identification of one Unit Punch Card for each structure as the master card permits tabulation by structures instead of units, through a sort which removes all non-master cards. Tabulations on this basis are economical insofar as they require handling only part of the punch cards in tabulation. In areas of multiple dwellings, where there are many more unit than structure cards, this economy may be considerable. Tabulation from master punch cards should be used, however, only for such special purposes as studying the structure deficiency items as distinct from those of dwellings, or for analysis of environmental scores by type of structure. Certainly no attempt should be made to analyze conditions of dwelling units from the master cards alone, for there is no assurance that the unit which happens to occur on the master card is typical of units in the structure.

Within proper limitations, master card tabulations may be useful in studying enforcement programs for specific types of structures, or for other special purposes. For instance, if a comparison were wanted of hall lighting, stairs and fire escapes, and daylight obstruction in large and small tenements, this information might be obtained most economically from the master cards alone. However, if the tabulation shows type of structure (one or two family, three-to-six family, etc.), as the heading of a column-group, the table is not a primary but a secondary table (series 1), since the basis of comparison is a descriptive breakdown of the housing facilities.

Tables made from master cards are identified by the usual numbers and rank symbols, preceded by the letter S (for Structure), thus: *S 4-B,* to distinguish them from the standard dwelling unit tables.

E. Secondary Tables

GENERAL INSTRUCTIONS; SPECIMENS

Secondary tabulations by descriptive breakdowns of housing and occupants are described in Chapter V, Section 6, both as to purpose and general method of execution. There is no set scheme of secondary tables, the purpose of these being to provide a framework within which desired analysis of special problems can be systematically and economically carried out to meet the needs of a particular study. Cards are tabulated in the same general manner as in the primary series. Incompletely scored units can usually be excluded. Special practices are pointed out and specimen tables shown in the following pages. Charts are usually desirable to summarize secondary as well as primary tables.[63]

As previously noted, secondary tables may often be made to advantage at a higher rank than primary tables: for instance, rank A or BA where primary tables have been of rank CB.

Identification; use of stub and columns. Secondary tables are identified by the number of the subject which constitutes the stub. The full table number includes the series prefix (1 or 2) which indicates whether column-groups of the table are devoted to characteristics of the housing or of the occupants.

Since secondary tables are made in varying combinations for different districts or studies, it is not possible to specify a systematic scheme of sheet numbers for any table, as was done for primary tabulation. On a subject of great interest, several sheets of the Tabular Form might be prepared for one district, using different column-group breakdowns for the same stub material. In this case, sheets of any table can be numbered consecutively as made for each district, without regard to comparability of sheet numbers from one district to another. Where it is possible, however, to outline a generally similar plan of secondary tabulation for various districts, this may permit preparation of secondary tables in the same sequence for each district, with the advantages of a more or less uniform scheme of sheet numbering.

Descriptive cross-tabulations. Secondary tables on Subjects 2 and 3 (Tables 12, 13 and 22, 23) have both stub and columns devoted to descriptive material. In other words, these tables permit cross-tabulation of descriptive data in the stub against other descriptive characteristics in the column-groups rather than qualitative

[61] Environment Tables 7-B and 9-B are disregarded here; they are made by the environmental survey staff, and are not affected by this procedure.

[62] In such a case as that described, if need should develop later for tables on appraisal areas, Tables 4-C through 6-C could be made and the time-consuming Table 8-C might still be omitted. Subtotal scores of Tables 6-C would show rather clearly how each appraisal area deviates from the district characteristics for facilities, maintenance and occupancy.

[63] Secondary charts are often most effective when presented as range-graphs only, as shown in Figure 18. This type of chart can of course be condensed to show 18 range-graphs on a sheet, one in each column.

SIZE OF HOUSEHOLD BY SIZE OF UNIT: SHEET 1 of 1 District 1 TABLE 13-B

Percent of completely scored dwelling units with STUDY SPECIMEN

household of stated size, by number of rooms in unit Readings _____ Entries _____ Date _____

Rooms in Unit / Percent of DU (Total: 882)	1 Room 12.4			2 Rooms 15.3			3 Rooms 12.6			4 Rooms 41.2			5, 6 Rooms 10.5			7 or more Rooms 8.0		
Class PERSONS IN HOUSEHOLD	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
15) 15 persons or more	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14) 14 persons	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
13) 13 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
12) 12 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11) 11 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10) 10 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9) 9 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8) 8 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7) 7 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6) 6 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
5) 5 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4) 4 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3) 3 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2) 2 "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1) 1 person	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tabular Form DS-6: 1944, Committee on Hygiene of Housing, APHA

FIGURE C34. SIZE OF HOUSEHOLD BY SIZE OF UNIT: TABLE 13

data in the stub against descriptive characteristics in the column-groups, as in secondary tables on Subjects 4-7.

If, for instance, it is desired to study the distribution of monthly rents more closely than is possible from Table 2—for example, tabulating by tenement and nontenement structures—a table might be constructed with classes of rent in the stub, the column-groups representing tenement and nontenement structures. The table would be specified as number 12 of appropriate rank. Or if it were desired to study size of family in relation to size of unit, the stub would carry the number of persons in the household, and column-groups would represent the sizes of unit, as shown in Figure C34. This table would be number 13, signifying that the stub treats a characteristic of the occupants and that column-groups carry descriptive breakdowns of the housing. Such a table could be further subdivided, as for instance by grouping size of unit under tenement and nontenement structures—perhaps with size of unit condensed to three classes, to get the table on one sheet of the Tabular Form. For such a table the arrangement of column-groups would resemble Figure C35.

More elaborate descriptive cross-tabulations can be readily designed if needed, and tables of this type may give the answer to basic questions of broad policy.

Even the most complex tables can be readily identified as to basic subject by the table number. With tables filed by number, both the simple and elaborate tables on a related subject will automatically be filed together, minimizing the risk that a refined and expensive table will be overlooked because of muddy filing practice, and either made again or its value lost.

Effect of machine tabulation. If a Hollerith installation includes a printing tabulator, practice in secondary tabulations may be more influenced by the machines than in the case of primary tables. The reason for this is that primary tables are made district by district as these are scored, and tabulations from the simple counts of

SECONDARY TABLES

NUMBER OF BASIC DEFICIENCIES BY RACE AND RENT: SHEET 1 of 1 District 1 TABLE 25-B

Percent of completely scored dwelling units with stated number STUDY SPECIMEN

of basic deficiencies, by race of occupants, by class of rent Readings _____ Entries _____ Date _____

Race of Occupants	-- Nonwhite --									-- White --								
Monthly Rent	$0.01-$14.99			$15.00-$24.99			$25.00 or more			$0.01-$14.99			$15.00-$24.99			$25.00 or more		
Percent of DU (Total: 882)		20.5			18.0			4.7			12.0			28.3			16.5	
Class NUMBER BASIC DEFICIENCIES	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
13) 13 basic deficiencies	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
12) 12 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11) 11 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10) 10 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9) 9 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8) 8 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7) 7 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6) 6 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
5) 5 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4) 4 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3) 3 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2) 2 " "	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1) 1 basic deficiency	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
0) No basic deficiencies	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tabular Form DS-6: 1944, Committee on Hygiene of Housing, APHA

FIGURE C35. NUMBER OF BASIC DEFICIENCIES BY RACE AND RENT: TABLE 25

the sorter are sufficient. Primary tables of higher rank are produced by calculation from tables of lower rank, and the total body of cards need never be handled. With secondary tables, however, which may involve elaborate breakdowns of cards to be sorted for the entire survey at one time, economies in card handling made possible by the printing tabulator may be of real importance.

SECONDARY TEST OF QUALITY DIFFERENCE

The purpose and method of making this test are explained in Chapter V, Section 6, with an example in Figure 29, where tabular entries have been omitted and only the range-graphs shown.

It should be noted that the column-headings or column-group headings in this test will show, as the control data, the percent of cases falling in each classification represented by a column-group on the form. Approximate percentages for this purpose can be taken from the appropriate items of primary Tables 2 and 3 if there are few incomletely scored units (usually excluded from secondary tables but included in Tables 2 and 3). Otherwise (or if the column-group breakdowns for the new table are not represented in Tables 2 and 3) the percentage distribution into column-group classifications can be obtained in the following manner, with marginal punch cards: after sorting the cards for classifications represented by the column-groups, combine the cards of all classifications and scale them in the Percentor to obtain the percent of cases falling into each classification. If the total body of cards is beyond the capacity of the Percentor, batch-scaling can be used, as described in Section G.

The total number of cases treated by the table, taken from Table 1, should be given in the column or column-group side heading, as shown in Figure C34.

Interpretation of the test of difference by the director will, of course, determine what further secondary tables are to be made.

DESCRIPTIVE TABLES: SUBJECTS 1-3

Control tabulation. While secondary control tables are provided for by Tables 11 and 21, construction of these is not essential. Control data for the significant classifications of data are shown in the secondary test of difference, as explained above, in the form of percentage distribution of cases into the significant groupings. These percentages can be converted into absolute values, for use in the headings of other secondary tables and charts, by computation from the primary control data.

Description of housing and occupants. Secondary tables on Subjects 2 and 3 have been discussed above under Descriptive cross-tabulations.

QUALITY TABLES: SUBJECTS 4-7

Secondary tables of total and subtotal scores or of the number of basic deficiencies should present few problems once the purposes of secondary analysis are understood. The skeleton layout of such a table is given in Figure C35, where provision is made for studying the degree of substandardness (number of basic deficiencies) in the housing of white and nonwhite families in relation to the rent paid—rent being classified into three broad groupings in order to simplify the table and present it on one sheet of the Tabular Form.[64] Here the control data would be obtained by scaling the cards after the sorts for the six column-group classifications.

Secondary tables are not ordinarily made for subject 7, subtotal environment scores. With marginal punch cards, these scores cannot be tabulated by dwelling unit but only by block or frontage from the Block Appraisal Forms, and there is no practicable way of presenting these data in relation to descriptive breakdowns of housing or of occupants. With machine tabulation, if the card design permits punching of subtotal environment scores, such tables can of course be made.

DEFICIENCY TABLES: SUBJECTS 8 AND 9[65]

If tabulation has proceeded in the normal sequence, with primary preceding secondary tables, full Tables 8 will be available for primary geographic breakdowns, and it may not be necessary to make full secondary Tables 18 or 28. These tables can be abridged by selecting for tabulation those particular deficiencies which seem most pertinent to the types of housing or types of occupants which are being studied. For example, in Table 18, if the breakdown is between units in large and small tenement structures, deficiency items might be selected to stress the special characteristics of tenements, such as public hall lighting, means of egress, sharing of sanitary facilities and daylight obstruction. Or the selection of deficiency items to be tabulated might be governed by the enforcement powers of sponsoring agencies.

F. Graphic Materials from Work Tables

WORK CHARTS: GENERAL INSTRUCTIONS

The use of charts for interpretation of work tables has been explained and illustrated in Chapter V, Seciton 5. The number and types of charts to be made will be determined by the director.

Charts such as those shown in Figures 23-28 are prepared from the column *d* values of work tables. In addition to horizontal bar charts, charts consisting of range-graphs without the tabular data, as shown in Figure 18, Chapter V, will often be useful. All charts are identified by the numbers and rank symbols given in Figure 13, and multiple sheets of any chart are numbered in sequence as made. It is desirable to have a consistent sequence of chart-making from primary tables to assure uniform treatment and easy comparison of graphic materials from one district to another.

A SUMMARY CHART OF DWELLING DEFICIENCIES

The chart of Table 8 may well include a sheet or two on distribution of the principal nonbasic dwelling deficiencies, as well as one on basic deficiencies, illustrated in Figure 28. However, since a chart of all significant deficiencies might require several sheets of the Tabular Form, it is desirable to summarize the findings of Table 8 in a one-sheet chart such as that shown in Figure C36. This chart, by condensing the 30 dwelling deficiencies into the summary groupings discussed in Chapter II, Section 5, shows at a glance the essential character of deficiencies in various districts or other areas. A chart of this type could precede the more detailed findings of the separate basic and nonbasic deficiencies from Table 8.

This summary chart is made in three steps, as follows:

1) List the 30 deficiency items in the groupings of Figure 4;[66]
2) Record the percent of units with scores above punching class 0 for each deficiency item;
3) Take the average of these percentages for all items in each grouping.

The calculations are made on a separate copy of the Tabular Form, which is used as a preliminary work sheet, identified for filing as Chart (W) 8. These steps, with a specimen work sheet, can be shown by the consultant.

INEXPENSIVE SKETCH MAPS

In the early stages of analysis it is helpful to have a

[64] It is not intended here to overemphasize the desirability of condensing tables to get them on one sheet. The same result can be obtained, where more elaborate tables are desired, by pasting or stapling another Tabular Form at the right of the original sheet to provide the necessary additional column-groups.

[65] The preceding paragraph also applied in principle to Subject 9, environment deficiencies.

[66] In Figure C36 the 14 groupings of Figure 4 have been reduced to 13 by combining natural and artificial lighting. This practice is recommended.

DISTRIBUTION OF DWELLING DEFICIENCIES BY TYPE: Summary: SHEET 1 of 4 Districts 1, 2 CHART 8-B

Completely scored dwelling units with significant STUDY SPECIMEN

deficiency in Stated Group:* Percentage Index** Readings ____ Entries FAB Date 9/27/45

District	District 1						District 2											
Total Scored DU	882 DU						1257 DU											
Percent of DU	17	33	50	67	83		17	33	50	67	83							
DEFICIENCY GROUP*	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m	d	c	m
FACILITIES	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Egress and circulation		15	–	–	–	–			40	–	–	–	–	–	–	–	–	–
Toilet and sewage disposal		13	–	–	–	–				63	–	–	–	–	–	–	–	–
Water supply, bathing, washing				44	–	–				58	–	–	–	–	–	–	–	–
Lighting and ventilation		15	–	–	–	–			47	–	–	–	–	–	–	–	–	–
Kitchen facilities	6	–	–	–	–	–		31	–	–	–	–	–	–	–	–	–	–
Heating facilities						81			40	–	–	–	–	–	–	–	–	–
Room design (indices)				51	–	–				60	–	–	–	–	–	–	–	–
MAINTENANCE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Gen'l sanitary, safety hazards		27	–	–	–	–				55	–	–	–	–	–	–	–	–
Deterioration and disrepair			30	–	–	–			45	–	–	–	–	–	–	–	–	–
Rat infestation		15	–	–	–	–			36	–	–	–	–	–	–	–	–	–
OCCUPANCY	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Room crowding		21	–	–	–	–				49	–	–	–	–	–	–	–	–
Area crowding	9	–	–	–	–	–				58	–	–	–	–	–	–	–	–
Doubling of families	2	–	–	–	–	–		27	–	–	–	–	–	–	–	–	–	–

*Each deficiency group includes one to four of the 30 standard deficiency items. **Percentage index is mean percent of units deficient (with score above punching class 0) for all items in group. Tabular Form DS-6: 1944, Committee on Hygiene of Housing, APHA

FIGURE C36. DISTRIBUTION OF DWELLING DEFICIENCIES BY TYPE: CHART 8

standard small-scale base map or maps of the survey area on which various preliminary interpretations can be plotted. Good sketch maps for this purpose can be made as follows: prepare a tracing or tracings of the survey districts at a small scale (preferably a scale at which the entire survey area or each major section of it will go on a single 8½ x 11 inch sheet, for filing in ring-books with tables and charts). Show the title of the study on this tracing, and rule five rectangular boxes for legend indications, such as those shown in the New Haven maps of Part I. Stipple or otherwise indicate parks, institutions and other nonresidential blocks which will not be scored in this appraisal. All these indications on the base map should be in India ink. Obtain from a blueprinter black and white ozalid prints of this map—or better, obtain from a lithoprinter copies of the map printed on tracing paper. Such lithoprint copies, when completed with indications of the survey findings, can be used as new tracings from which ozalid prints can be obtained at less cost than for photostats.

Copies of the map can be used to show scores, quality grades, percentage incidence of deficiencies, etc., in five-part breakdowns by a scheme of free-hand cross-hatching in black and white, as follows:

1) Grade A (or other best class): no hatching; blocks or other areas of map left blank.[67]
2) Grade B (or other second class): horizontal hatching.
3) Grade C (or third class): horizontal hatching crossed by vertical hatching.
4) Grade D (or fourth class): horizontal hatching crossed by two hatchings at 45° diagonals.
5) Grade E (or fifth class): hatching as in Grade D, plus vertical hatching.

The scheme of hatching should be shown on the base

[67] This assumes that parks and other wholly nonresidential blocks carry special indication, so that no blank spaces will appear on finished maps except those of grade A or other best class.

reassembled would exceed the capacity of the scaling device, the principle of batch-scaling can be used, as follows:

1) Prepare a work sheet as described under batch-sorting, above.
2) Reassemble the cards of subgroups, class by class.
3) Divide the reassembled groups of cards into even batches of such size that each batch is within the capacity of the machine. Label as many column-groups of the work sheet as there are batches: Batch 1, Batch 2, etc.
4) Scale each batch and tabulate columns *c* and *d* for the punching class or classes it contains, recording each batch in its separate column-group of the work sheet.[68]
5) Total across the sheet the column *d* entries for each punching class. Divide the total for each class by the number of batches used.
6) Transcribe the column *d* values produced in step 5 onto the finished table of the desired rank. Obtain the column *c* values of the new rank by addition from column *d*. Construct range-graph by inspection of column *c*.
7) File the work sheet in the ringbook, under Work Sheets.

The following case will illustrate this scheme. Suppose that after step 3 the total group of cards is divided into five batches. Then suppose that the first batch is entirely made up of class 1 cards for the item in question. The first column-group (Batch 1) would therefore show 100 percent as the entry for class 1 (both column *c* and column *d*) and this column-group would show no entry for any other class. Suppose then that no other batch contains class 1 cases. The 100 percent entry in the first column-group would be carried to the Total column-group, and would then be divided by five because there are five batches. Class 1 would appear in column *d* of the final table as constituting 20 percent of the total body of cases. This would of course be correct, since class 1 made up one-fifth of the total. The same principle applies with all other combinations, and correct results will be obtained if the instructions above are strictly followed.

Calculation of totals. This method rather than reassembly will usually be necessary in transposing rank B tables to rank A, because the cards for each district will have been distributed by other sorts long before the rank A tables are to be made. For this or any other situation where cards in the subgroups are not in sorts by the factor to be tabulated, calculations will be used as follows:

1) Prepare a work sheet and identify it for the table desired as explained above for batch-sorting. Assign a column-group to each district or other subgroup, and reserve the last column-group for totals.
2) Refer to the table which is to be transposed to higher rank. For each class represented in the stub of the table, multiply the column *d* value in each column-group by the control count at the head of that column-group, and enter the product in the corresponding column-group of the work sheet. This product is a frequency distribution (count), not a percentage distribution.
3) When all entries of step 2 have been made, these are added across the sheet and entered as class totals in column *c* of the column-group farthest to the right.
4) Add the class total entries in the right-hand column *c* and record the grand total. Check this grand total against the appropriate control tabulation.
5) Compute percentage distributions from the class totals obtained in step 3. Enter these percentages in column *d* of the Total column-group of the work sheet.
6) Record the percentages (obtained in step 5) in column *d* of the finished table of the proper number and rank.
7) Compute cumulative percentages from the column *d* entries of step 6, and enter these in column *c* of the table.
8) If a range-graph is desired, construct this by inspection of column *c*.

CALCULATING EXACT MEDIAN AND QUARTILE VALUES

Range-graphs which show median and quartile values by class only, without these values exactly calculated, will be sufficient for many work tables, at least in the early stages of interpretation. Calculated medians will be needed, however, to classify areas into quality grades, and calculated medians and quartiles may also be desired for various other purposes. The method of obtaining these can be illustrated by reference to Figure 16, Chapter V.[69]

Median value[70]

1) Locate in column *c* of the table the class which contains the median. In Figure 16 this is class 4 (according to column *c*, classes 1-3 contain 35 percent of the cases, classes 1-4 contain 56 percent of the cases; therefore the middle case—point 50 on the Percentor scale—falls in class 4).
2) Determine from column *c* the *percentage range* of

[68] Note that one or two classes only may occur in a batch, and that the column *d* values of that batch will total to 100 percent regardless of how many classes of cards it contains. Note also that the same class of cards may occur in two or more batches.

[69] In using Figure 16 for this purpose, it assumed that incomes in each class will be distributed evenly throughout the class, i.e., that there will not be a clustering of incomes around $100, $150 or $200 per month. Actually there may be considerable clustering around such figures, and in the case of monthly rents there would almost certainly be such clustering around $15, $20 and $25 per month, and so on. For data which tend to cluster in this fashion, calculated medians and quartiles should be used only with caution. For data on penalty scores, however, which have no tendency to cluster, the method explained here may be freely used.

[70] Instructions are given here as though no range-graph had been drawn in Figure 16, so as to illustrate the calculation of median values from the column *c* values alone.

(percent of cases in) the class which contains the median. In Figure 16 this is 21 pecent (56 percent minus 35 percent). This is also the figure in column *d* for this class.

3) Calculate how far up this percentage range the median lies. In Figure 16 the median lies 15/21 of the distance from bottom to top of the range (50 is 15 points above 35, 6 points below 56).
4) Note from the stub the *value range* of the class which contains the median. In Figure 16 the value range is $25.00 ($125.00 to $149.99).
5) Multiply the fraction obtained in step 3 by the value range noted in step 4. For the example the result is $17.85 (15/21 x $25.00).
6) Add the result of step 5 to the value which is the lower limit of the class containing the median. In the example, the result is $142.85 ($17.85 plus $125.00), say $143.00. This is the calculated median value.

The same procedure, omitting dollar signs, will produce calculated median scores.

Quartile values. The first and third quartiles can be obtained by the steps given above, substituting *quartile* for *median* in each case. For Figure 16 these values are respectively, $111.11 and $171.59 (the result of step 3 for the lower quartile is 8/18; for the upper quartile it is 19/22).

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